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ORIGINAL ARTICLE

Parenting and Family Adjustment Scales (PAFAS): Validation of a Brief Parent-Report Measure for Use in Assessment of Parenting Skills and Family Relationships

Matthew R. Sanders · Alina Morawska · Divna M. Haslam · Ania Filus · Renee Fletcher

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Abstract This study examined the psychometric characteristics of the Parent and Family Adjustment Scales (PAFAS). The PAFAS was designed as a brief outcome measure for assessing changes in parenting practices and parental adjustment in the evaluation of both public health and individual or group parenting interventions. The inventory consists of the Parenting scale measuring parenting practices and quality of parent–child relationship and of the Family Adjustment scale measuring parental emotional adjustment and partner and family support in parenting. Two studies were conducted to validate the inventory. A sample of 370 parents participated in Study 1 and a sample of 771 parents participated in Study 2. Children's ages ranged from 2 to 12 years old. In Study 1 confirmatory factor analysis supported an 18-item, four factor model of PAFAS Parenting, and a 12-item, three factor model of PAFAS Family Adjustment. Psychometric evaluation of the PAFAS revealed that the scales had good internal consistency, as well as satisfactory construct and predictive validity. In Study 2 confirmatory factor analysis supported stability of the factor structures of PAFAS Parenting and PAFAS Family Adjustment revealed in Study 1. Potential uses of the measure and implications for future validation studies are discussed.

Keywords Parenting · Family · Assessment · Validation

M. R. Sanders (✉) · A. Morawska · D. M. Haslam · A. Filus · R. Fletcher
Parenting and Family Support Centre, School of Psychology, University of Queensland, Brisbane, QLD 4072, Australia
e-mail: m.sanders@psy.uq.edu.au

Introduction

There is a widespread international support for the broader adoption and implementation of evidence-based parenting interventions in an effort to reduce unacceptably high rates of child maltreatment and behavioural and emotional problems in children [1–4]. Contemporaneously there has been increasing recognition of the importance of routinely assessing outcomes achieved by parenting programs when delivered by practitioners and organizations serving individual families. Routine outcome assessment is needed because it cannot be assumed that positive results achieved in an RCT with expert clinicians will necessarily be achieved when the same intervention is delivered by different practitioners, in a different setting or cultural context. Hence, reliable, user friendly, widely accessible outcome measures are required for assessment of child and parent outcomes in child mental health and family services.

Many developers of evidence-based parenting programs recommend specific parent or teacher report outcomes measures are employed to monitor the effects of parenting interventions. Widely used child outcome measures that have been employed in intervention studies include the Eyberg Child Behaviour Inventory [5] the Child Behavior Checklist [6], the Strengths and Difficulties Questionnaire [7] and the Child Adjustment and Parental Efficacy Scale [8]. These child outcome measures have satisfactory reliability, construct validity and are change sensitive to the effects of parenting interventions. All have been translated into multiple languages and have been shown to be reliable.

Changes in parenting skills, family relationships and parental emotional adjustment are also primary targets of parenting interventions [9, 10]. However, there are no psychometrically sound, change-sensitive, parent-report

measures that assess these constructs in a brief inventory. Available measures such as the Parenting Scale [11], the Alabama Parenting Questionnaire [12], the Parental Tasks Checklist [13] when combined as an assessment package tend to be long, use different or confusing scoring formats, have high literacy demands and typically do not specifically measure the proximal targets of the intervention introduced in parenting programs. In addition they were not designed for routine use in clinical settings or as part of a public health approach to parenting support.

The present study sought to fill this gap by developing and validating a new 40-item parent-report inventory the Parent and Family Adjustment Scales [14]. The PAFAS assesses five domains of parent and family functioning that are known risk factors for child emotional and behavioural problems [15–18]. These are: (1) parenting practices defined as the parenting approach or style expressed by the strategies parents use for promoting child's positive and prosocial behaviour (e.g., descriptive praise, logical consequences); (2) quality of parent–child relationship defined as the level of reciprocal warmth and parental satisfaction with the relationship with a child; (3) parental emotional adjustment to the parenting role defined as the level of stress, depression and anxiety experienced by a parent; (4) positive family relationships defined as the level of supportive and conflict-free family environment; and (5) parental teamwork defined as the level of social support a parent receives from the partner in the parenting role. These factors are known to be related to child outcomes and they are common targets of evidence-based parenting programs and are expected to change as a result of a parenting intervention [9, 10].

The aims of the study were to (1) apply principles of measure development to create a brief, user friendly, public domain measure of parenting and family adjustment; (2) determine the construct and predictive validity of the PAFAS and (3) determine the internal consistency of the inventory.

Methods

Sample Characteristics[1]

Study 1

The data was collected in conjunction with evaluating the validity of the Child Adjustment and Parent Efficacy Scale [8, 19] and used the same sample and procedure. Three hundred and seventy parents were recruited from around Australia, however, 23 provided only some basic demographic data and did not complete the questionnaires giving the total sample of N = 347. Parents had a mean age of 39.49 (SD 5.98) and most self-identified as Caucasian/Australian (n = 250, 72.1 %) with the remaining identifying as Aboriginal and Torres Strait Islander (n = 7, 2.0 %), Asian (n = 5, 1.4 %), or other (n = 8, 2.3 %). The majority of parents were mothers (n = 295, 85.0 %). Children's ages ranged from 2 to 12 years (M = 7.34, SD 2.80) and a good gender ratio of target children was obtained with only slightly more girls (n = 180, 51.9 %) than boys (n = 129, 37.2 %). A good mix of parental education was represented with 166 (47.8 %) having a university degree, 76 (21.9 %) completing part or all of high school, and 67 (19.3 %) completing trade or technical college. Most parents were married (n = 229, 66.0 %) and employed (n = 239, 68.9 %). The majority (n = 240, 69.2 %) reported no difficulties meeting essential household expenses, although 67 (19.3 %) declared having problems meeting essential expenses over the last 12 months. Furthermore, 104 (30.0 %) reported that they earn enough to comfortably purchase most of the things they really want, 146 parents (42.1 %) declared that their earnings allow them to purchase only some things that they want, while 59 parents (17.0 %) reporting they don't have enough money to purchase much of anything they really want.

Study 2

A second sample of parents was recruited as a part of larger International Parenting Survey study, which aimed to collect data on parenting and child outcomes across four countries, including Australia. Seven hundred and seventy-one parents from around Australia responded to the survey. Of these 198 only completed demographic questions; hence, they were excluded from the analyses leaving the final sample of N = 573. The average age of parents was 38 years (SD 6.31). Most self-identified as Caucasian/Australian (n = 345, 60.1 %) with the remaining identifying as Aboriginal and Torres Strait Islander (n = 5, .9 %), Asian (n = 6, 1.0 %), or other (n = 63, 11.0 %). The average age of children was 6 years (SD 3.10, range 2–12 years old) and a good gender ratio of target children was obtained with 275 (47.9 %) girls and 299(52.1 %) boys. Most participants were mothers (n = 539, 93.9 %), married (n = 430, 74.9 %), working (n = 419, 73.0 %) and had university degree (n = 371, 68.30 %). The majority (n = 423, 73.7 %) reported no difficulties meeting essential household expenses over the last 12 months. Furthermore, 196 (36.20 %) reported that they earn enough to comfortably purchase most of the things they really want, 225 (39.20 %) declared that their earnings allow them to purchase only some things that they want, while

[1] Numbers may not add up to 100 % due to the missing data.

121 (22.30 %) reporting they don't have enough money to purchase much of anything they really want. Both samples had similar demographic characteristics and were comparable to the Australian norms [20]. More detailed characteristics of the samples are presented in "Appendix 3".

Procedure

The following steps were taken in designing the measure: (1) definition of constructs; (2) review of existing measures; (3) generation of initial item pool; (4) input and feedback from key experts; (5) input and feedback from parents, and; (6) initial piloting to assess psychometric properties. We determined the constructs for assessment based on key factors known to impact family functioning and known risk factors for child emotional and behaviour problems including strong family relationships [16, 17], quality of parenting practices [21, 22], social support and parental teamwork [23, 24] and parental emotional adjustment [25].

First, we reviewed existing validated measures (e.g., the Strengths and Difficulties Questionnaire [26], the Depression Anxiety Stress Scale [27], the Eyberg Child Behavior Inventory [28], the Parenting Scale [11], and examined our own data from a range of intervention and population studies [e.g., 29, 30]) to identify common parenting problems. The initial item pool was based on this review in the context of our focus on family adjustment and in response to our clinical observations. The initial scale was disseminated to a number of international experts in the parenting literature for feedback and to ensure wording and content were culturally relevant.

Following this parent consultation was obtained using in-depth semi-structured interviews conducted with four parents to gain feedback about how easy the measure was to complete and understand and whether it appeared to have face validity. Parents first completed the questionnaire by following the standard instructions and were then asked to highlight anything on the questionnaire that was ambiguous. We then asked a series of structured questions designed to elicit feedback (e.g., is there anything that would make the survey easier to complete? Is there anything missing from the questionnaire that is important to you?). Feedback from the interviews indicated the measure was easy to understand and had high face validity. In response to parent and expert feedback several items were modified to increase clarity, the order of items was changed and some items were dropped. This resulted in the 40-item Parenting and Family Adjustment Scales (PAFAS) [19] outlined below (See "Appendix 1").

To ensure the revised measure could be understood by parents with low education it was assessed for readability using the Flesch reading ease and the Flesch-Kincaid grade tests. These tests assess comprehension difficulty and provide an estimate of education grade level (grade 1–12) required for understanding. Scores of 82.2 (out of a possible 100 where higher scores indicate greater ease) and 5.4 (possible range 1–12) were obtained on the Flesch reading ease test and the Flesch-Kincaid grade tests respectively indicating the measure could be easily understood by a student 11–13 years of age or someone with a fifth grade level education.

Following the consultation and measure development process we conducted initial piloting to assess the psychometric properties of the measure (Study 1). A second sample was recruited as a part of a larger International Parenting Survey study (Study 2) for the purpose of testing stability of the factor structure with an independent sample of parents. The same recruitment procedure was used for both samples and both were samples of convenience. Parents were recruited around Australia via schools and day care centres, online forums, and parenting newsletters via forum posts and school newsletters and flyers distributed across childcare centres and schools. Recruitment material directed parents to a website where they read a brief summary of the research and provided informed consent prior to completing the questionnaire anonymously.

Measures

The Family Background Questionnaire [14] was used to assess family demographic characteristics, including child and parent age and gender, family composition, parent marital status, ethnicity and education and income.

The Parent and Family Adjustment Scales (PAFAS; [14]) is an inventory assessing parenting practices and parent and family adjustment. It consists of a 28-item Parenting Scale encompassing two domains including parenting practices (17 items) and parent–child relationship (11 items) and of a 12-item Family Adjustment scale encompassing three domains including parental emotional maladjustment (5 items), family relationships (4 items) and parental teamwork (3 items). Each item is rated on a 4-point scale from not true of me at all (0) to true of me very much (3). Some items are reverse scored. For each subscale of the PAFAS Parenting and PAFAS Family Adjustment the items are summed to provide scores, with higher scores indicating higher levels of dysfunction.

The Child Adjustment and Parent Efficacy Scale [19] is a measure of child behavioural and emotional adjustment and parental efficacy. It consists of 27 items on a 4-point scale, ranging from not true of my child at all (0) to true of my child most of the time (3) that assess child behaviour. Twenty-four items assess behaviour concerns (Behaviour Scale; e.g., My child rudely answers back to me) and behavioural competencies (Behaviour Scale; e.g., My child

follows rules and limits), and three items assess emotional adjustment (Emotional Maladjustment Scale; e.g., My child worries). Some items are reverse scored. Items are summed to yield a total intensity score (range of 0–81), behaviour score (range of 0–72) and an emotional maladjustment score (0–9) where high scores indicate higher levels of problems. The Confidence Scale consists of 19 items and measures parents' level of confidence in managing child emotional and behavioural problems. Items are rated on a 10-point scale, ranging from certain I can't do it (1) to certain I can do it (10). A total efficacy score with a possible range of 19–190 is calculated by summing all efficacy items, with higher scores indicating a greater level of confidence. The measures have been demonstrated to have good psychometric properties [8].

Analytical Procedure

Sample Size, Power and Precision

A minimal recommended sample size in SEM studies is 200 cases [37]. In addition, the results of recent simulation studies suggest that the recommended sample sizes for CFA are $N \geq 200$ for the theoretical models and $N \geq 300$ for the population models [31]. Under these guidelines the available samples of 347 cases in Study 1 and of 573 cases in Study 2 were acceptable for testing psychometric properties of PAFAS.

Study 1

Construct Validity

The construct validity of PAFAS was examined in two steps. First, we evaluated the factor structure of the scales through confirmatory factor analysis 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 maximum likelihood estimator MLR, which produces standard errors and fit indices that are robust in relation to nonnormality of observations and the use of categorical variables when there are at least four or more response categories [32–34]. The Chi square (χ^2) goodness-of-fit statistic, the comparative fit index (CFI), the root mean square error of approximation (RMSEA) with 90 % confidence interval, 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: the CFI values should be $> .95$, although values above .90 are considered adequate [35]; the RMSEA values should be $<.05$, though values as high as .08 are also considered reasonable [36]; and the SRMR values should be $<.08$ [35]. Models were respecified based on Modification Indices (MIs), inspection of standardized residuals and theoretical considerations [37]. 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. When models are nested a significant difference in the Chi square value associated with the difference in degrees of freedom suggests that the model with the fewer degrees of freedom fits the data significantly better [37]. We calculated the Chi square difference test for nested models using the scaled Chi square and formulas developed by Satorra and Bentler [38], which are available on the Mplus website (www.statmodel.com). Smaller values of AIC and BIC indicate better fit of the model [39, 40].

The assessment of construct validity included investigation of the convergent and discriminant validity [41]. Three approaches were applied to assess the convergent validity: (i) we evaluated the statistical significance and magnitude of factor loadings for each latent construct [42]; (ii) checked that the estimate of the average variance extracted (AVE) that is shared between the construct and its measures is above .50 [43]; (iii) tested that estimates of composite reliability (CR) were above .70 [43], although values of .60 and more are also considered acceptable [44].

We also employed three techniques to assess the discriminant validity. First, we examined that the correlations between the latent constructs are not close or equal to the value of 1.00. As an extension to that approach, we used the χ^2 difference test [45]. 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. The third method included the examination if the average variance extracted estimates (AVE) for the constructs are higher that the shared variance between these constructs (squared interconstruct correlation estimate—SIC) [43].

Predictive Validity

We assessed the predictive validity of PAFAS by examining associations between parenting and family adjustment constructs as measured by PAFAS and child adjustment and parental efficacy constructs of CAPES. Pearson product-moment correlations were calculated in SPSS v. 20 to assess associations between the constructs.

Reliability

Due to the limitations associated with Cronbach's alpha coefficient when the assumptions of tau-equivalence and uncorrelated errors are violated [46–48] we assessed the

reliability of PAFAS by calculating the H coefficient [49]. The H coefficient is computed from standardized factor loadings and is used to assess the reliability of a latent construct itself as reflected by scores from multiple observed variables. Its advantage 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 [50]. Values above .70 are considered good indicators of internal consistency, however, values above .60 are also acceptable [49, 51].

Study 2

Stability of the Factor Structure

We investigated the stability of the factor structures of PAFAS Parenting and PAFAS Family Adjustment revealed in Study 1 via confirmatory factor analysis in Mplus version 7.0 [31]. We performed CFA using the independent sample of parents that participated in Study 2 and applied the same guidelines for conducting CFA as outlined in Study 1 (see above). Since our purpose was to verify the factor structure of PAFAS revealed in Study 1, only the one-sample CFA was conducted and no constrains were imposed on the parameters in the model.

Results

Study 1

The purpose of Study 1 was the initial validation of the hypothesized factor structure of PAFAS as well as assessment of the validity and reliability of the inventory.

Data Screening

The sample of N = 347 parents was chosen for the analysis with 7.06 % data missing. Little's MCAR test indicated that the data were missing completely at random, $\chi^2(4010) = 4136.77$, $p = .08$. Mplus full information (FIML) procedure was applied to account for missing data, which allows all available information to be used in the analysis without deleting cases with missing values [52]. FIML has been shown to outperform traditional approaches for handling missing data [53, 54].

Raw data was examined for departures from both univariate and multivariate normality, and for the presence of potential outliers. Thirty-five out of 40 PAFAS items showed significant skew and 21 items showed significant kurtosis (the average skewness and kurtosis were 1.01 and .42, respectively). The normalized estimates of Mardia's coefficient of multivariate kurtosis for PAFAS was high (310.94 with C.R. of 49.96) indicating multivariate non-normality of the sample [55, 56]. In addition, the univariate outliers were detected and as a result 111 (.80 %) extreme data points for PAFAS 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 [56].

Construct Validity

Factor Structure of PAFAS Parenting. The analysis started with testing the hypothesized two factor model (Model A). As Table 1 shows, the overall fit of this model to the data was poor; additionally MIs showed problems with many items. Therefore we decided to use the *jigsaw piecewise* procedure described by Bollen [45] to test each of the two factors individually before combining them in one model. This approach allows establishing the best set of items to assess each construct (items with high factor loadings and low error measurement) before testing the multi-factorial model.

The Parenting practices subscale initially showed poor fit to the data (See Table 1, Model B). The examination of the factor structure coefficients indicated that seven items (1, 4, 5, 7, 11, 12 and 14) did not load significantly on the factor and needed to be excluded. The 10-item model showed improvement over its predecessor, however, the fit indices were still poor (See Table 1, Model B1). The inspection of standardized residuals indicated that five more items needed to be removed (items 10, 2, 9, 15, 13). In addition, the MIs indicated that the model fit could be improved by allowing the correlation between error terms of items 3 "If my child doesn't do what they're told to do, I give in and do it myself" and 17 "I give my child what they want when they get angry or upset". Both items referred to giving into the child's demands when they get angry or do not want to cooperate, making the correction theoretically sensible. Changes were made one at a time (Models B2–B7). As Table 1 presents, Model B7 showed acceptable fit to the data and the factor loadings on this final 5-item subscale ranged from satisfactory to high (.40–.67).

Since twelve items were removed from the original Parenting practices subscale we investigated whether they would create a separate factor. The initial model did not show good fit to the data (See Table 1, Model C). The examination of the factor structure coefficients showed that seven items (1, 2, 4, 5, 7, 10, and 13) did not load significantly on the factor and needed to be excluded. The revised model showed very good fit indices (See Table 1, Model C1) and the factor loadings on this subscale ranged from satisfactory to high (.31–.67).

Table 1 Confirmatory factor analysis of the factor structure of PAFAS parenting and PAFAS family adjustment (Study 1)

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	SRMR	RMSEA	RMSEA 90 % CI	AIC	BIC
PAFAS Parenting										
A										
PAFAS Parenting	1383.54***	349			.349	.10	.093	.087–.098	18382.36	18709.30
Initial 2-factor model										
Testing factors individually jigsaw pricewise procedure										
B										
Parenting practices	672.98***	119			.375	.108	.116	.108–.125	12424.97	12621.14
B1										
Parenting practices deleted items 1,4,5,7,11,12,14	262.42***	35			.566	.095	.140	.125–.156	6760.49	6874.53
B2										
Parenting practices deleted item 10	146.80***	27			.688	.078	.116	.098–.134	6161.55	6264.21
B3										
Parenting practices deleted item 2	93.26***	20			.777	.065	.105	.084–.127	5559.21	5650.46
B4										
Parenting practices deleted item 9	61.95***	14			.810	.058	.102	.077–.128	4807.17	4887.02
B5										
Parenting practices deleted item 15	40.75***	9			.842	.055	.103	.072–.136	4084.40	4152.84
B6										
Parenting practices deleted item 13	30.40***	5			.854	.047	.124	.084–.168	3411.28	3468.32
B7										
Parenting practices with correlated errors between items 3 & 17	8.29	4	46.70***	1	.975	.029	.057	.000–.112	3392.47	3453.28
C										
Parenting Practices (2)	411.93***	54			.303	.120	.138	.126–.151	9022.77	9161.25
C1										
Parenting Practices (2) deleted items 1,2,4,5,7,10,13	15.95**	5			.935	.036	.081	.039–.128	3597.64	3654.67
D										
Parenting practices (3)	112.18***	14			.639	.091	.142	.119–.167	5242.93	5323.70
D1										
Parenting practices (3) deleted items 1, 4,7	2.84	2			.995	.016	.036	.000–.121	2614.66	2660.29
D2										
Parenting practices (3) deleted item 2[a]	–	–			–	–	–	–	2011.13	2045.35
E										
Parent–child relationship	262.66***	55			.703	.092	.123	.109–.137	6068.80	6194.17
E1										
Parent–child relationship deleted item 18	190.64***	35			.760	.083	.116	.100–.132	5363.99	5477.97

Table 1 continued

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	SRMR	RMSEA	RMSEA 90 % CI	AIC	BIC
E2										
Parent–child relationship deleted item 21	120.84***	27			.838	.065	.103	.084–.122	4768.92	4871.50
E3										
Parent–child relationship deleted item 23	89.33***	20			.858	.063	.102	.081–.125	3819.94	3911.12
E4										
Parent–child relationship deleted item 27	57.10***	14			.902	.054	.097	.071–.123	3231.63	3311.42
E5										
Parent–child relationship deleted item 26	36.77***	9			.928	.048	.097	.065–.130	2709.14	2777.52
E6										
Parent–child relationship with correlated errors between items 24 & 25	21.53***	8	26.45***	1	.965	.042	.072	.036–.109	2692.41	2764.59
Testing the final four-factor model										
F										
PAFAS Parenting 4-factor model	351.87***	144			.855	.071	.066	.057–.075	11486.81	11733.95
F1										
PAFAS Parenting 4-factor model deleted item 11	309.78***	127			.868	.068	.066	.057–.075	10633.43	10869.17
F2										
PAFAS Parenting 4-factor model with item 19 cross-loaded on Coercive parenting	249.52***	126	26.24***	1	.911	.060	.054	.044–.064	10567.37	10806.90
F3										
PAFAS Parenting 4-factor model with item 19 loading only on the Coercive parenting	249.53***	127			.911	.060	.054	.044–.064	10565.76	10801.49
PAFAS family adjustment										
G										
PAFAS Family adjustment initial 3-factor model	199.52***	51			.901	.055	.092	.078–.105	7038.07	7188.19
G1										
PAFAS Family adjustment with correlated errors between items 36 & 37	132.59***	50	64.14***	1	.945	.051	.069	.055–.083	6966.10	7120.72

All models based on N = 347

χ^2 = Satorra-Bentler scaled Chi square, *df* = degrees of freedom, CFI = comparative fit index, SRMR = standardized root mean square residual, RMSEA = root mean square error of approximation, CI = confidence interval, AIC = Akaike's information criterion, BIC = Bayesian information criterion

*** $p < .001$

[a] Just-identified model

Fig. 1 4-factor confirmatory factor analysis of the 18-item PAFAS parenting with 2 error covariances and standardized estimates (results for Study 1 and Study 2). *** $p < .001$, In brackets factor loadings obtained in the sample from Study 2

Again, we investigated if the remaining seven items would create another factor. The initial model did not show good fit to the data (See Table 1, Model D) according to all fit indices. The examination of the factor structure coefficients showed that three items needed to be removed (items 4, 7, and 1) due to insignificant factor loadings. In addition, item 2 had a very low loading on the designated factor (standardized loading = .22, $p < .01$) and was removed too. After correction the subscale consisted of only 3 items (just-identified model) and thus we could not obtain fit indices for this model (Model D2). However, the factor loadings on this construct were satisfactory (.45–.76).

For the parent–child relationship subscale the initial model did not show good fit to the data (See Table 1, Model E). The inspection of standardized residuals indicated that five items (items 18, 21, 23, 26 and 27)[2] needed to be removed and the MIs implied that the model fit could

[2] These items did not form a separate factor in a subsequent analysis. For more information please contact first author.

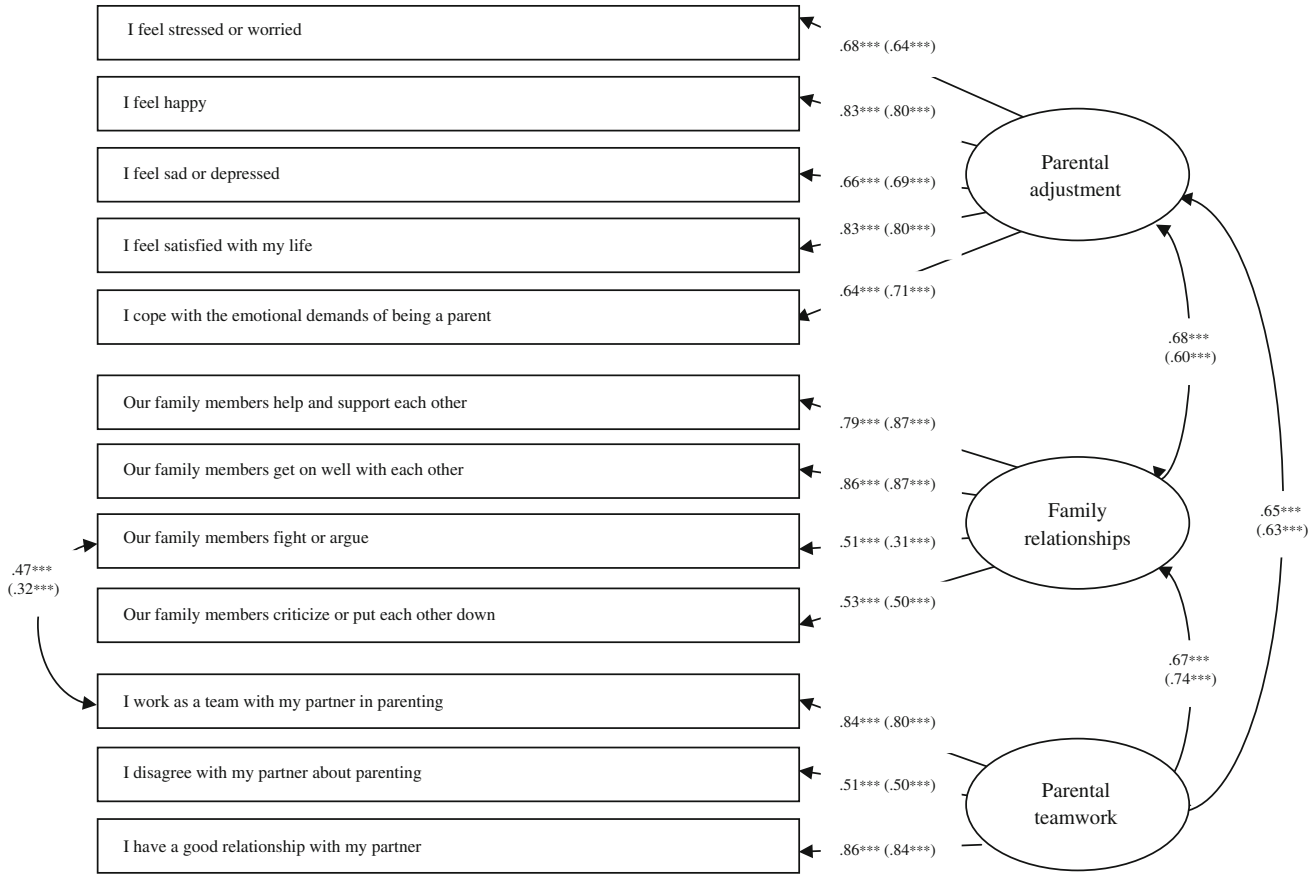

Fig. 2 3-factor Confirmatory Factor Analysis of the 12-item PAFAS Family Adjustment with 1 Error Covariance and Standardized Estimates (results for Study 1 and Study 2). *** $p < .001$, In brackets factor loadings obtained in the sample from Study 2

be improved by allowing the correlation between error terms of items 24 "I am proud of my child" and 25 "I enjoy spending time with my child". Both items referred to positive emotions felt towards a child, making the correction theoretically sensible. The revised model showed good fit to the data (See Table 1, Model E6) and the factor loadings on the final 6-item subscale ranged from acceptable to high (.41–.86).

To summarise, the post hoc analysis revealed that the items designed to measure parenting practices assess three separate constructs. After careful inspection of the indicators we decided to call these subscales: Parental consistency (items 3, 6, 8, 16, and 17), Coercive parenting (items 9, 11, 12, 13, 14, and 15) and Positive encouragement (items 2, 5, 10, and 13). In the final step, we tested all four factors of the PAFAS Parenting in one model. The initial model did not show satisfactory fit to the data (See Table 1). The inspection of standardized residuals indicated that item 11 needed to be removed and the MIs indicated that the model fit could be improved by allowing item 19 "I get annoyed with my child" to cross-load on the Coercive parenting subscale. Item 19 referred to parental negative attitude towards a child and it made theoretical sense to let this item cross-load on the Coercive parenting subscale. As Table 1 presents, the revised model showed good fit to the data (See Table 1, Model F2). However, the inspection of factor structure indicated that item 19 did not load significantly on the parent–child relationship subscale anymore. We deleted this item from this factor leaving it as a significant indicator of the Coercive parenting construct (Model F3). The final model showed good fit to the data (See Table 1) and its graphic illustration is presented in Fig. 1.

Factor Structure of PAFAS Family Adjustment. The analysis started with testing the hypothesized three factor model (Model G). As Table 1 shows, the overall fit of this model was good according to CFI and SRMR, but not according to χ^2 and RMSEA. The MIs indicated that the model could be improved by allowing the correlation between error terms of items 36 "Our family members fight or argue" and 37 "Our family members members criticize or put each other down" (Model G1). Items 37 and 36 both referred to negative family relationships, making the correction theoretically sensible. As shown in Table 1,

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*	$\Delta\chi^2$
PAFAS parenting		
Parental consistency and coercive parenting	1	329.43–249.53 = 50.91***
Parental consistency and positive encouragement	1	343.00–249.53 = 105.85***
Parental consistency and parent–child relationship	1	355.77–249.53 = 59.02***
Coercive parenting and positive encouragement	1	408.48–249.53 = 117.73***
Coercive parenting and parent–child relationship	1	353.46–249.53 = 48.75***
Positive encouragement and parent–child relationship	1	384.52–249.53 = 826.57***
PAFAS family adjustment		
Parental adjustment and family relationships	1	238.84–132.59 = 90.37***
Parental adjustment and parental teamwork	1	259.88–132.59 = 83.64***
Family relationships and parental teamwork	1	232.22–132.59 = 167.60***

df degrees of freedom

*** $p < .001$

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

	AVE	SIC
PAFAS parenting		
Parental consistency	.27	.25, .06, .17
Coercive parenting	.36	.25, .21, .44
Positive encouragement	.45	.06, .21, .19
Parent–child relationship	.44	.17, .44, .19
PAFAS family adjustment		
Parental adjustment	.54	.46, .42
Family relationships	.48	.46, .45
Parental teamwork	.57	.42, .45

AVE average variance extracted, *SIC* squared interconstruct correlation

fit values based on CFI, SRMR and RMSEA indicated that Model G1 showed sufficient fit between the model and the data. A graphic illustration of the final model is presented in Fig. 2.

Convergent and Discriminant Validity

PAFAS Parenting. For the convergent validity of PAFAS Parenting, all the indicators had significant loadings on the factors they were specified to measure (See Fig. 1). The AVE estimates for Positive encouragement and parent–child relationship were slightly below the cut-off value of .50 (.45, .44, respectively). However, the AVE estimates for Parental consistency and Coercive parenting were below the cut-off criterion (.27 and .36 respectively) indicating that there is still too much error remaining in the items intended to measure these constructs. The composite reliability estimates (CR) for the four subscales were satisfactory (.64, .75, .70, and .78 for Parental consistency, Coercive parenting, Positive encouragement, and parent–child relationship, respectively).

The intercorrelations between the factors were moderate (See Fig. 1). The Chi square difference tests provided strong evidence for discriminant validity of the constructs (See Table 2). The comparison of AVE estimates with SIC estimates are presented in Table 3. For Parental consistency and Positive encouragement the comparisons provided evidence for good discriminant validity. Yet, the SIC estimate for Coercive parenting and parent–child relationship was higher (.44) than the AVE estimate of Coercive parenting subscale (.36). This indicates that the items of Coercive parenting do not differentiate well enough between this construct and the parent–child relationship construct.

PAFAS Family Adjustment. For the PAFAS Family Adjustment, all the indicators had significant loadings on the factors they were specified to measure (See Fig. 2). The AVE estimates for Parental adjustment and Parental teamwork were well above the cut-off value of .50 (.54, .57, respectively) and for the Family relationships only slightly lower that the recommended cut-off (.48). The composite reliability estimates (CR) for all three subscales were satisfactory (.85, .76, and .79 for Parental adjustment, Family relationships and Parental teamwork, respectively). For the discriminant validity the intercorrelations between the constructs were moderate (See Fig. 2). The results of Chi square difference tests provided strong evidence for discriminant validity of the constructs (See Table 2). The comparison of AVE estimates with SIC estimates (presented in Table 3), again provided strong evidence for good discriminant validity of the three constructs.

Predictive Validity

Table 4 presents Pearson product-moment correlation coefficients for all the constructs measured by PAFAS and CAPES. As expected, Parental consistency, Coercive parenting, parent–child relationship, Parental adjustment, Family relationships and Parental Teamwork correlated positively with child Emotional and Behavioural maladjustment, Intensity of child maladjustment and negatively

Table 4 Reliability, means, standard deviations, and Pearson correlations among PAFAS and CAPES

	1	2	3	4	5	6	7	8	9	10	11
1. PAFAS parenting											
Parental consistency	–										
2. PAFAS parenting											
Coercive parenting	.37***	–									
3. PAFAS parenting											
Positive encouragement	.21***	.06	–								
4. PAFAS parenting											
Parent–child relationship	.30***	.47***	.32***	–							
5. PAFAS family adjustment											
Parental adjustment	.40***	.45***	.12*	.55***	–						
6. PAFAS family adjustment											
Family relationships	.24***	.36***	.10	.40***	.57***	–					
7. PAFAS family adjustment											
Parental teamwork	.29***	.34***	.07	.32***	.55***	.58***	–				
8. CAPES											
Emotional maladjustment	.21***	.26***	.01	.22***	.35***	.30***	.23***	–			
9. CAPES											
Behavior	.38***	.57***	−.01	.52***	.52***	.44***	.32***	.42***	–		
10. CAPES											
Intensity	.39***	.57***	.01	.52***	.54***	.45***	.34***	.53***	.99***	–	
11. CAPES											
Confidence	−.51***	−.51***	−.14*	−.59***	−.59***	−.46***	−.38***	−.35***	−.69***	−.71***	–
Mean	3.53	4.50	2.15	1.23	4.56	2.85	1.98	2.29	21.45	23.77	148.95
SD	2.39	2.52	1.72	1.89	2.98	2.16	1.83	1.85	11.07	11.84	32.79
Coefficient H	.70	.78	.75	.85	.87	.84	.85	.77	.90	.92	.96

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

with Parental efficacy as measured by CAPES. Yet, the Positive encouragement subscale showed significant correlation only with Parental efficacy subscale of CAPES. Lack of significant correlations with other CAPES constructs may stem from the low variability on the Positive encouragement subscale.

Internal Consistency

The coefficients H for the PAFAS Parenting were .70 (Parental consistency), .78 (Coercive parenting), .75 (Positive encouragement) and .85 (parent–child relationship), and for the PAFAS Family Adjustment were .87 (Parental adjustment), .84 (Family relationships), .85 (Parental teamwork). These results indicate very good internal consistency of the measure.

Study 2

The purpose of Study 2 to was purely to test the stability of the revised PAFAS. In particular, in Study 1 when evaluating the factor structure of the inventory through CFA we relied heavily on the MIs to improve fit, which is a post hoc procedure. This approach requires a cross-validation study on a second independent sample, to test the stability of the modified factor structure [37].

Data Screening

The sample of N = 573 parents was chosen for the analysis with 1.56 % data missing. Little's MCAR test indicated that the data were missing completely at random, $\chi^2(85) = 99.29$, $p = .14$. Mplus FIML procedure was applied to account for missing data [52].

Raw data was examined for departures from both univariate and multivariate normality, and for the presence of potential outliers. Twenty-eight out of 30 PAFAS items showed significant skew and 12 items showed significant kurtosis (the average skewness and kurtosis were −.32 and 1.36, respectively). The normalized estimates of Mardia's coefficient of multivariate kurtosis for PAFAS were high (146.51 with C.R. of 40.09) indicating multivariate non-normality of the sample [55, 56]. In addition, the univariate outliers were detected and as a result 132 (.77 %) extreme data points for PAFAS were transformed by changing the value to the next highest/lowest (non-outlier) number. A review of squared Mahalanobis distances (D^2) indicated one multivariate outlier, which was deleted from further analysis given the final sample size of N = 572.

Stability of the Factor Structure

To test stability of the factor structure of PAFAS we performed CFA using independent sample of parents, who participated in the International Parenting Survey study. The 18-item four-factor model of PAFAS Parenting showed good fit to the data [$\chi^2(127) = 285.54$, $p < .001$; CFI = .908; SRMR = .053; RMSEA = .047 (90 % CI .040–.054)] and all the items had satisfactory loadings on the designated factors (See Fig. 1). It should be noticed that one of the correlations between error terms (of items 24 and 25) turned out to be not significant in the second sample of parents. This indicates instability and triviality of this additional estimate, i.e. it reflected sampling error rather than important relationship [40]. Further, the 12-item three-factor model of PAFAS Family Adjustment showed very good fit to the data [$\chi^2(50) = 138.04$, $p < .001$; CFI = .960; SRMR = .043; RMSEA = .055 (90 % CI .044–.066)] and all the items had satisfactory loadings on the designated factors (See Fig. 2). Thus, the analyses supported stability of the factor structure of PAFAS revealed in Study 1.

Discussion

This study aimed to validate the PAFAS as brief inventory designed to assess a number of domains associated with family functioning and child outcomes. We used an expert informant and consumer feedback approach to develop a clinically valid 40-item inventory comprised of two scales PAFAS Parenting and PAFAS Family Adjustment that could be used in clinical and normative samples to assess parenting practices, parent–child relationship, parental adjustment, family relationships and parental teamwork. We subjected the resultant scales to rigorous psychometric evaluation and found support for the 18-item, four factor structure of PAFAS Parenting and the 12-item three factor structure of PAFAS Family Adjustment, both with very good internal consistency. The final 30-item PAFAS inventory is outlined below (See "Appendix 2").

As far as PAFAS Parenting Scale is concerned, we hypothesized that the scale would assess two domains: parenting practices and parent–child relationship. The post hoc CFA revealed that the items intended to measure parenting practices formed three separate factors referring to parental consistency, coercive parenting and positive encouragement. As a result, the four-factor structure of PAFAS Parenting was confirmed. The four parenting constructs captured by PAFAS Parenting are the common targets of evidence-based parenting interventions [10, 56, 57] and therefore we believe that the revised structure of PAFAS Parenting is theoretically sound.

The analysis revealed that several items of the PAFAS Parenting Scale needed to be removed to make the entire scale valid. Five items intended to measure parenting practices did not load significantly on any of the factors. They referred to parenting practices addressed specifically in behavioural parenting interventions: item 1 "I make my child apologize for misbehaving", item 2 "I tell my child to stop as soon as I notice them misbehaving", item 4 "I deliberately ignore my child's minor misbehaviour", item 7 "I send my child to time-out (e.g. sit alone in the quiet place) when they misbehave", and item 11 "I nag my child, or have a long talk about why their behaviour is not acceptable". We believe that the knowledge about positive or negative impact of these practices on child outcomes may be less common among parents and thus these items may not differentiate well enough between competent and inadequate or poor parenting. These items could potentially change to become more functional and clinically valid during the course of interventions as parental knowledge of the effects of specific parenting practices on child outcomes increases. However, they were not included in the final scale.

Five items needed to be removed from the parent–child relationship subscale: item 18 "I play or read books with my child", item 21 "I encourage my child to be physically active", item 23 "I worry about how my child will turn out in the future", item 26 "I teach my child to do things", and item 27 "I eat meals with my child". These items were designed to measure parent–child relationship; however, they describe mainly daily routines and instrumental roles played by parents. This may explain why they did not load

significantly on the parent–child relationship factor and needed to be removed.

The PAFAS Parenting Scale showed adequate convergent validity as measured by examination of factor loadings and composite reliability estimates. Further, the AVE estimates indicated that items of Positive encouragement and parent–child relationship appear to be good indicators of these constructs. However, for Parental consistency and Coercive parenting there is on average more error in the items than there is variance explained by these constructs implying that further research into these subscales is warranted. Furthermore, the analysis showed that four subscales of PAFAS Parenting had good discriminant validity as measured by Chi square difference test and examination of intercorrelations between the constructs. Yet, the comparison of SIC estimate with AVE estimates for Coercive parenting and parent–child relationship subscales showed that the indicators of Coercive parenting do not discriminate well enough between this construct and the parent–child relationship construct.

As far as PAFAS Family Adjustment scale is concerned, the analysis confirmed the hypothesized 12-item, three-factor model. The scale showed very good convergent validity as measured by examination of the factor loadings, AVE estimates and the composite reliability estimates. It also showed excellent discriminant validity as measured by the examination of intercorrelations between the constructs, Chi square difference tests and the comparison of SIC estimates with AVE estimates.

The analyses also provided evidence for good predictive strength of PAFAS. The zero-order correlations between parent and family adjustment constructs of PAFAS Parenting and PAFAS Family Adjustment and child adjustment and parental efficacy constructs as measured by CAPES fitted the expected pattern. Specifically, the results showed that the poorer family and parent functioning, the less confident parents are in managing child misbehaviour and the more severe are child emotional and behavioural problems.

Finally, the modified factor structures of PAFAS Parenting and PAFAS Family Adjustment have shown to be stable across two independent samples of parents. The initial validation of the factor structure of PAFAS via CFA relied mostly on modification indices, which is a pot-hoc procedure that revealed a different than hypothesized factor structure of PAFAS. However, the cross-validation of the modified structures of PAFAS Parenting and PAFAS Family Adjustment on the independent sample of parents supported stability of the 18-item four-factor model of PAFAS Parenting and the 12-item three-factor model of PAFAS Adjustment.

This initial validation study indicates that the PAFAS Family Adjustment Scale has excellent psychometric properties. The psychometric properties of the PAFAS Parenting Scale show promise, however, more work and research is needed before this measure can be considered strictly as valid in terms of convergent and discriminant validity of the constructs. The PAFAS has the advantage of being a brief inventory that assesses a range of key variables that are known risk and protective factors for family outcomes and that are hypothesised to improve during behavioural family interventions in a time efficient way. The inventory could be used to track population change, in clinical work and in research contexts. The inventory fits well with the CAPES as a measure of child adjustment and parenting efficacy and the use of both measures together may be beneficial given the relationships identified between the two subscales. Finally, the scales' readability suggests it could be understood by someone with a grade 5 education level.

The findings should be considered in light of study limitations. In particular, although the sizes of both samples were reasonable these were normative samples and did not include clinical cases. Therefore, validation using a clinical sample is required to determine if the measure can differentiate between clinical and non-clinical populations, and to determine if it is change sensitive and has adequate test- re-test reliability. Additionally, the scale should be validated in more diverse samples in terms of sex (mothers/fathers), age and ethnicity and across different cultures. More research into the convergent and discriminant validity of the PAFAS is also needed, e.g., the relationships between PAFAS scales and other measures of parenting practices, as well as parent and family functioning.

The initial validation study of PAFAS indicates that the scale shows promise as a quick, easy to administer tool that has the potential to assess multiple domains of family functioning in parents of young children. However, more research is needed into the psychometric properties of the inventory.

Summary

To inform public health policy and parenting interventions it is essential to develop and validate family functioning measures that are valid and reliable, change sensitive, readily deployable, and can facilitate the tracking of intervention outcomes. This study examined the psychometric properties of the Parent and Family Adjustment Scales (PAFAS) that was designed as a brief outcome measure for assessing changes in parenting practices and

parental adjustment in the evaluation of public health and individual or group parenting interventions. The measure was developed using an expert informer and consumer feedback approach. The inventory was subjected to rigorous psychometric evaluation. The results of confirmatory factor analysis supported an 18-item, four factor structure of PAFAS Parenting scale and a 12-item, three factor structure of PAFAS Family Adjustment scale with very good internal consistency. The initial validation provided support for the convergent and discriminant validity of the PAFAS Family Adjustment scale. However, the convergent and discriminant validity of the PAFAS Parenting scale was not satisfactory, indicating that the research into this scale may be warranted. Nevertheless, PAFAS showed good predictive strength in terms of its associations with child adjustment and parental self-efficacy constructs as measured by CAPES. The study indicates that PAFAS shows promise as a quick, easy to administer tool that has the potential to assess multiple domains of family functioning in parents of young children. However, more research is needed into the psychometric properties of the inventory.

Appendix 1: Parent and Family Adjustment Scales (PAFAS)—A List of the Original 40 items

Item
1. I make my child apologise for misbehaving
2. I tell my child to stop as soon as I notice them misbehaving
3. If my child doesn't do what they're told to do, I give in and do it myself
4. I deliberately ignore my child's minor misbehaviour
5. I give my child a treat, reward or fun activity for behaving well
6. I follow through with a consequence (e.g. take away a toy) when my child misbehaves
7. I send my child to time-out (e.g. sit alone in a quiet place) when they misbehave
8. I threaten something (e.g. to turn off TV) when my child misbehaves but I don't follow through
9. I shout or get angry with my child when they misbehave
10. I praise my child when they behave well
11. I nag my child, or have a long talk about why their behaviour is not acceptable
12. I try to make my child feel bad (e.g. guilt or shame) for misbehaving to teach them a lesson
13. I give my child attention (e.g. a hug, wink, smile or kiss) when they behave well
14. I spank (smack) my child when they misbehave
15. I argue with my child about their behaviour/attitude
16. I deal with my child's misbehaviour the same way all the time
17. I give my child what they want when they get angry or upset
18. I play or read books with my child
19. I get annoyed with my child
20. I chat/talk with my child
21. I encourage my child to be physically active
22. I enjoy giving my child hugs, kisses and cuddles
23. I worry about how my child will turn out in the future
24. I am proud of my child
25. I enjoy spending time with my child
26. I teach my child to do things
27. I eat meals with my child
28. I have a good relationship with my child
29. I feel stressed or worried
30. I feel happy
31. I feel sad or depressed
32. I feel satisfied with my life
33. I cope with the emotional demands of being a parent
34. Our family members help and support each other
35. Our family members get on well with each other
36. Our family members fight or argue
37. Our family members criticize or put each other down
38. I work as a team with my partner in parenting
39. I disagree with my partner about parenting
40. I have a good relationship with my partner

Appendix 2: 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
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 3: Participants' Demographic Information

Variable	Study 1			Study 2		
	Mothers N = 295 (85 %)	Fathers N = 14 (4 %)	Total N = 347 (100 %)	Mothers N = 539 (93.9 %)	Fathers N = 32 (5.6 %)	Total N = 574 (100 %)
Age						
Mean (SD)	39.34 (5.93)	42.32 (6.63)	39.49 (5.98)	37.96 (6.18)	42.04 (6.87)	38.16 (6.31)
Range	24–58	28–54	24–58	24–52	31–60	24–56
Child's age						
Mean (SD)	7.29 (2.80)	8.23 (2.71)	7.34 (2.80)	6.03 (3.11)	6.72 (3.06)	6.08 (3.11)
Range	2–12	3–12	2–12	2–12	2–12	2–12

Variable	Mothers N = 295 (85 %) Frequency (%)	Fathers N = 14 (4 %) Frequency (%)	Total N = 347 (100 %) Frequency (%)	Mothers N = 539 (93.9 %) Frequency (%)	Fathers N = 32 (5.6 %) Frequency (%)	Total N = 574 (100 %) Frequency (%)
Child's gender						
Girls	174 (59.00 %)	5 (35.70 %)	180 (51.90 %)	264 (49 %)	11 (34.4 %)	275 (47.9 %)
Ethnicity						
Caucasian/Australia	244 (82.70 %)	6 (42.90 %)	250 (72.00 %)	324 (60.1 %)	18 (56.3 %)	345 (60.10 %)
Aboriginal & Torres Strait Islander	7 (2.40 %)	–	7 (2.00 %)	5 (.9 %)	–	5 (.9 %)
Asian	5 (1.70 %)	–	5 (1.40 %)	6 (1.1 %)	–	6 (1.0 %)
Other	6 (2.00 %)	2 (14.30 %)	8 (2.30 %)	58 (10.8 %)	5 (15.6 %)	63 (11.0 %)
Education						
University degree	159 (53.90 %)	7 (50.00 %)	166 (47.80 %)	346 (67.50 %)	23 (82.10 %)	371 (68.30 %)
High school	73 (24.70 %)	3 (21.40 %)	76 (21.90 %)	66 (12.90 %)	2 (6.30 %)	68 (11.90 %)
Trade/Technical college	63 (21.40 %)	4 (28.60 %)	67 (19.30 %)	100 (18.60 %)	3 (9.40 %)	104 (18.10 %)
Relationship status						
Married	221 (74.90 %)	7 (50.00 %)	228 (65.70 %)	406 (75.30 %)	23 (71.90 %)	430 (74.90 %)
Cohabitating	31 (10.50 %)	2 (14.30 %)	33 (9.50 %)	50 (9.30 %)	4 (12.50 %)	55 (9.60 %)
Divorced	28 (9.50 %)	4 (28.60 %)	32 (9.20 %)	50 (9.30 %)	4 (12.50 %)	54 (9.40 %)
Widow/er	2 (.70 %)	–	2 (.60 %)	2 (.40 %)	–	2 (.30 %)
Single	9 (3.10 %)	–	9 (2.60 %)	29 (5.40 %)	–	29 (5.10 %)
Work status						
Working full-time	95 (32.20 %)	8 (57.10 %)	103 (29.70 %)	135 (25.00 %)	21 (65.60 %)	157 (27.40 %)
Working part time	107 (36.30 %)	3 (21.40 %)	110 (31.70 %)	238 (44.20 %)	4 (12.50 %)	244 (42.50 %)
Not working, looking for a job	15 (51.00 %)	2 (14.30 %)	15 (4.30 %)	11 (2.00 %)	2 (6.30 %)	11 (1.90 %)
Home based paid work	24 (8.10 %)	–	26 (7.50 %)	16 (3.00 %)	–	18 (3.10 %)
Not working	54 (18.30 %)	1 (7.10 %)	55 (15.90 %)	112 (20.80 %)	1 (3.10 %)	113 (19.70 %)

Variable	Mothers N = 295 (85 %) Frequency (%)	Fathers N = 14 (4 %) Frequency (%)	Total N = 347 (100 %) Frequency (%)	Mothers N = 539 (93.9 %) Frequency (%)	Fathers N = 32 (5.6 %) Frequency (%)	Total N = 574 (100 %) Frequency (%)
Meeting essential expenses over last 12 months						
No difficulties	230 (78.00 %)	10 (71.40 %)	240 (69.20 %)	398 (73.80 %)	23 (71.90 %)	423 (73.70 %)
Difficulties	63 (21.40 %)	4 (28.60 %)	67 (19.30 %)	105 (19.50 %)	4 (12.50 %)	110 (19.20 %)
Finance, Earns						
Enough to purchase most of the things	101 (34.20 %)	3 (21.40 %)	104 (30.00 %)	184 (34.10 %)	11 (34.40 %)	196 (36.20 %)
Enough to purchase only some things	138 (46.80 %)	8 (57.10 %)	146 (42.10 %)	214 (39.70 %)	10 (31.30 %)	225 (39.20 %)
Not enough to purchase most of the things	56 (19.00 %)	3 (21.40 %)	59 (17.00 %)	113 (21.00 %)	7 (21.90 %)	121 (22.30 %)

The numbers may not add up to 100 % due to the missing data

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