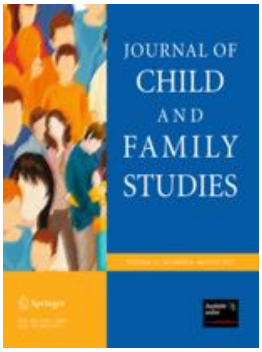

Journal of Child and Family Studies

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ISSN: 1062-1024 (print version)
ISSN: 1573-2843 (electronic version)

Journal no. 10826

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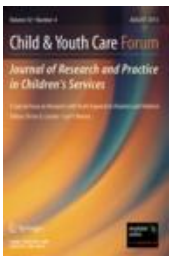

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Child & Youth Care Forum

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Journal of Child and Family Studies
All Volumes & Issues
ISSN: 1062-1024 (Print) 1573-2843 (Online)

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DOI 10.1007/s10826-017-0926-y

ORIGINAL PAPER

The Parenting and Family Adjustment Scales (PAFAS): an Indonesian Validation Study

Agnes Sumargi[1] · Ania Filus[2] · Alina Morawska[3] · Kate Sofronoff[3]

Published online: 3 November 2017

Abstract Understanding parenting risk and protective factors can help clinicians and researchers to develop effective family interventions. To have knowledge of these risk and protective factors, validated assessment tools are required. Validation studies for parenting measures with Indonesian parents are lacking, despite the need for access to parenting interventions among Indonesian families. This study aimed to validate the Parenting and Family Adjustment Scales (PAFAS), a brief parenting and family adjustment measure developed in Australia that has been validated with Panamanian and Chinese parents. A sample of 210 Indonesian parents with children aged 2–12 years old completed the Indonesian version of the PAFAS and Child Adjustment and Parent Efficacy Scale (CAPES). Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) were used for analyses. CFA resulted a four-factor PAFAS Parenting scale (15 items) and three-factor PAFAS Family adjustment scale (8 items). SEM analyses with PAFAS and CAPES revealed a good fit of the model of relationships between parent, family and child constructs to the data. The internal consistencies of PAFAS were good or acceptable, with the exception of Parental consistency. Overall, PAFAS had satisfactory psychometric properties. It is a promising measure that can potentially be used to study parenting risk and protective factors among Indonesian families. Item improvement and further validation with more diverse samples are suggested.

Keywords Parenting · Family adjustment · Measure · Validation · Indonesian parents

Introduction

Understanding parenting risk and protective factors is essential for the development of effective and culturally appropriate parenting interventions (Kumpfer et al. 2008; Sanders 2008). Research conducted in the Western world has shown that parenting and family adjustment contribute to child behavioral and emotional problems (McKee et al. 2008; Prevatt 2003). Yet, methodologically rigorous research on parenting risk and protective factors in Eastern cultures, particularly in Indonesia, is limited. One of the key issues is a lack of validated measures to capture effective and ineffective parenting strategies employed by Indonesian parents (Sumargi et al. 2015b). The available parenting studies in Indonesia have often used parenting measures developed in Western cultures and simply translated them into the native language to investigate the relationships between parenting or parent-child relationships and child/adolescent developmental outcomes. For example, Afriani et al. (2012) measured parenting styles based on adolescents' perspectives using the Parental Authority

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s10826-017-0926-y) contains supplementary material, which is available to authorized users.

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Questionnaire (Buri 1991) and investigated their relationships with adolescents' social and emotional competencies. Hasan et al. (2013) used a parent-child relationship measure adapted from the Longitudinal Study of Australian Children (Zubrick et al. 2008) and measured its contribution to child developmental outcomes and behavioral problems. These studies merely reported the internal consistencies for the measures without any further validation of the translated measures. This might have led to biases in the estimation of effect sizes and the validity of the obtained results. Further, with a recognized need to enhance parenting competence and child well-being in developing countries, including Indonesia, it is important to evaluate the effectiveness of disseminated parenting programs (Tomlinson and Andina 2015). The use of validated measures of parenting practices is essential to enable accurate evaluation of these programs.

Validating a measure that originated in another culture begins with a thorough assessment of the factor structure of the translated version to ascertain that it is equivalent to the original version (Borsa et al. 2012). The subsequent steps include an evaluation of the criterion or predictive validity as well as internal consistency. Only with properly translated and validated measures, it is possible to establish an accurate identification of cross-cultural similarities and differences in parenting practices as well as a robust model of parenting in a new culture (Locke and Prinz 2002).

Indonesia is a developing country in South-East Asia that has the fourth largest population in the world (i.e., 258.7 millions in 2016; Badan Pusat Statistik 2017) and medium Human Development Index (i.e., 0.69 in 2016, ranked 113 out of 188 countries in the world; United Nations Development Programme 2016). More than a half of the population (54%) lives in urban areas and 11% lives below the national poverty line (United Nations Development Programme 2016). Approximately 60% of Indonesians live in Java, an island occupying only 7% of the total land area (Badan Pusat Statistik 2017). In terms of education, the national literacy rate in 2005–2015 was high (94%) and 47% of adults (25 years old and older) had at least some secondary education (United Nations Development Programme 2016). Indonesia has more than 1300 ethnic groups with Javanese (40%) as the largest group (Na'im and Syaputra 2011). Indonesian-Javanese families have a strong bond, it is common that extended family members, such as grandparents, live together or nearby and become the caretakers of their grandchildren when parents are working (Setiadi 2006). In the family, fathers are usually the breadwinners and mothers deal with domestic work and provide care for their children. In recent days, it has been common that a family hires a maid or baby sitter to help mothers in carrying out their responsibilities (Setiadi 2006). Javanese parents teach their children to pay respect to higher authorities (e.g., parents and teachers) and repress their own desires in order to avoid conflict with the wishes of others (Koentjaraningrat 1985). Parents tend to be lenient with younger children, but use punishment with older children to enforce obedience (Koentjaraningrat 1985). Unfortunately, contemporary studies on parenting and family relationships in Indonesia are lacking and therefore, validating parenting measures with Indonesian parents might be beneficial as the first step to generate more parenting research.

The Parenting and Family Adjustment Scales (PAFAS; Sanders et al. 2014) was originally developed in Australia with the purpose to create a brief and user friendly questionnaire measuring parenting and family adjustment variables targeted in parenting programs. The PAFAS was chosen for two important reasons. First, it is a brief measure designed to evaluate not only parenting practices (PAFAS Parenting) but also parenting risk and protective factors, such as parental emotional adjustment, quality of family relationships and parental teamwork (PAFAS Family adjustment). With a brief measure, parents will be more likely to complete the questionnaire. Further, the PAFAS provides comprehensive outcomes that can be used to evaluate the need for parenting programs among Indonesian families. Second, the psychometric properties of PAFAS in two Australian samples ($n = 347$ and $n = 573$; both parents of children aged 2–12 years old) were good. Confirmatory Factor Analysis (CFA) resulted in a four-factor 18-item PAFAS Parenting scale and three-factor 12-item PAFAS Family Adjustment scale. Overall, the PAFAS subscales showed good internal consistencies (ranging from .70 to .87) and satisfactory construct and predictive validity (Sanders et al. 2014). Furthermore, the measure has been validated in collectivistic cultures, such as Panama (Mejia et al. 2015) and China (Guo et al. 2016). In both studies, the factor structures in the original PAFAS measure were mostly retained with fewer items and adequate internal consistencies (ranging from .50 to .82 and from .65 to .95 for Chinese and Panamanian parents, respectively). Considering that Indonesia is also a country with a collectivistic culture, it is relevant to test the validity of PAFAS and expect similar results.

Psychological literature and research on parenting practices in Indonesia is scarce. The existing studies imply that Indonesian parents employ different parenting practices than parents from Western, individualistic cultures. For example, Indonesian parents, in particular mothers, tend to be more protective and permissive, and use non-punitive approaches towards their young children (Koentjaraningrat 1985; Megawangi et al. 1995; Zevalkink and Riksen-Walraven 2001). This contrasts with the parenting in Western cultures that encourages children's autonomy from the early years by applying authoritative parenting strategies (Liu et al. 2005). In a collectivistic community, such as

Indonesia, social relations and harmony are important, respect and obedience to a higher authority are expected, and children's dependence on their parents is encouraged (Megawangi et al. 1995). Thus, parents can have close relationships with their child and may use higher levels of control. Parental control reflects parents' caring for their child which is often interpreted as a restriction of the child's independence in individualistic cultures (Chao and Tseng 2002). The validation studies of the PAFAS with parents from collectivistic countries have shown that PAFAS Parenting had the same factor structure as the Australian version with 2 or 3 items that were considered culturally inappropriate (Guo et al. 2016; Mejia et al. 2015). For example, being consistent in dealing with child misbehavior was perceived as an ineffective parenting strategy by Chinese parents (Guo et al. 2016). With respect to PAFAS Family adjustment, the three-factor model of the original version was confirmed with Chinese parents with one-item removed (Guo et al. 2016); however, for Panamanian parents, a two-factor model with four-items removed showed a better fit than a three-factor model (Mejia et al. 2015). The removed items depicted negative emotional states and family disagreement that could be perceived as threatening social harmony and therefore, undesirable for people from collectivistic cultures. Considering the individualistic-collectivistic differences, we expected that the psychometric properties of PAFAS in Indonesia might differ from the ones obtained with Australian parents in terms of the factor structures or specific items. This emphasizes the need for a rigorous cultural validation of the Indonesian PAFAS.

This study aimed to investigate the construct and predictive validity of the Indonesian version of the PAFAS and determine its internal consistency. This responds to the need for more research on parenting practices in Indonesia using a culturally appropriate and sensitive measure.

Method

Participants

The sample used for this study was recruited for the Indonesian Parent Survey, a project focusing on the need for parenting programs among Indonesian parents (Sumargi et al. 2015b). Two-hundred and ten Indonesian parents residing in Indonesia who had a child aged 2 to 12 years old completed the PAFAS and CAPES along with other measures used in the Indonesian Parent Survey (for details see Sumargi et al. 2015b). Participants were recruited via convenience sampling by advertising the study online through social media, such as Facebook and mailing lists. To increase the diversity of the sample, recruitment was also conducted in work places, religious sites and neighborhoods in Surabaya and Denpasar, two capital cities in East Java and Bali.

Most participants were mothers ($n = 153$; 73%) and the parents' mean age was 35.68 ($SD = 5.75$). The average child age was 5.80 ($SD = 2.80$) and there were slightly more boys ($n = 110$; 52%) than girls ($n = 100$; 48%). The majority of parents identified themselves as married ($n = 206$; 98%) and came from Javanese ($n = 122$; 58%) and Chinese-descendant backgrounds ($n = 41$; 20%). Most held a college degree ($n = 169$; 80%) and worked full time ($n = 148$; 72%). Their financial circumstances were mostly good with 67% of parents ($n = 139$) reporting no difficulties in meeting essential household expenses and only 28% ($n = 58$) reporting financial difficulties. The majority of participants lived as intact families ($n = 152$; 72%) or extended families ($n = 55$; 26%). Eighty-one percent of participants ($n = 170$) reported that they had other child caregivers to help them, mostly grandparents or relatives ($n = 65$; 38%) and housemaids ($n = 64$; 38%).

Procedure

This study used a subset of data from a previously published survey of Indonesian parents (Sumargi et al. 2015b). The original study obtained ethical clearance from the University of Queensland after following a review process according to the Australian National Statement on Ethical Conduct in Human Research.

Parents who were recruited online and offline as described above were asked for their consent to participate in this study. Two-hundred and ten Indonesian parents who provided their consents completed a set of questionnaires in their own time either online ($n = 125$; 60%) or using paper versions ($n = 85$; 40%). Parents who chose the paper-based questionnaires received the survey from data collectors, completed them in their own time, and returned the questionnaires to the data collectors who then transferred parents' responses into the online database. There were no significant differences between parents completing the questionnaires online or using paper-based versions in terms of demographic characteristics, with the exception that the paper-based participants had lower levels of education and reported more difficulties in meeting their essential household needs.

Measures

The Family Background Questionnaire (FBQ; Turner et al. 2002) assesses demographic characteristics of participants and their family. This includes parent and child age and gender, marital status, ethnicity, education level, employment status, and financial condition.

The PAFAS (Sanders et al. 2014) consists of 30 items assessing parenting practices and family adjustment over the past four weeks. It consists of two scales. PAFAS Parenting encompasses: Parental consistency (5 items; e.g., "I give my child what they want when they get angry or upset"), Coercive parenting (5 items; e.g., "I shout or get angry with my child when they misbehave"), Positive encouragement (3 items; e.g., "I praise my child when they behave well"), and Parent-child relationship (5 items; e.g., "I chat/talk with my child"). PAFAS Family adjustment encompasses: Parental adjustment (5 items; e.g., "I feel stressed or worried"), Family relationships (4 items; e.g., "Our family members fight or argue"), and Parental teamwork (3 items; e.g., "I work as a team with my partner in parenting"). Each item is scored on a 4-point scale ranging from *not true of me at all* (0) to *true of me very much* or *most of the time* (3). The items are summed to yield a separate score for each domain where higher scores indicate higher levels of dysfunction. Thus, higher scores in Parental consistency, Coercive parenting, Positive encouragement, and Parent-child relationship denote higher levels of inconsistent parenting, more frequent use of coercive practices, less frequent use of positive encouragement, and poorer parent-child relationships, respectively. Similarly, higher scores in Parental adjustment, Family relationships, and Parental teamwork indicate more parental stress, poorer family relationships, and less frequent teamwork in parenting a child, respectively. Sanders et al. (2014) reported that the PAFAS had satisfactory construct and predictive validity, as well as good internal consistencies among Australian parents ($\alpha = .70 - .85$).

The CAPES (Morawska et al. 2014) consists of 27 items assessing child maladjustment over the past four weeks (CAPES Intensity) and 19 items assessing parents' level of confidence in managing child misbehavior (CAPES Self-efficacy). CAPES Intensity encompasses two domains: Behavior problems (24 items; including behavior concerns, such as "My child yells, shouts or screams" and behavior competencies, such as "My child follow rules and limits") and Emotional problems (3 items, such as "My child worries"). Each item is scored on a 4-point scale ranging from *not true of my child at all* (0) to *true of my child very much*, or *most of the time* (3). The items are summed for each scale with higher scores indicating higher levels of child problems. CAPES Self-efficacy encompasses only a single domain where each item is scored on a 10-point scale, ranging from *certain I can't do it* (1) to *certain I can do it* (10). The items are summed to compute the total score with higher scores indicating a greater level of parenting confidence. Morawska et al. (2014) reported that the CAPES had satisfactory convergent and discriminant validity, as well as good internal consistencies ($\alpha = .74 - .96$) among Australian parents. The CAPES has been used in two intervention studies with Indonesian parents (Sumargi et al. 2014, 2015a), the internal consistencies were reported to be good ($\alpha = .81$, Sumargi et al. 2014; $\alpha = .71 - .94$, Sumargi et al. 2015a).

All measures were available in English. The first author translated the measures into Indonesian and to ensure the accuracy of the translation, an Indonesian postgraduate student in Australia who had academic qualifications in English literature and Education reviewed the translation. The reviewed translation was then tested with three Indonesian parents. Based on the reviewer's and parents' input, four words were refined for ease of understanding; that is, a word related to threatening in PAFAS Parenting, refined from *melontarkan ancaman* (throwing criticism) to *memberikan ancaman* (giving a threat); a word related to appropriateness in CAPES Intensity, refined from *pantas* (decent) to *sesuai* (appropriate); a word related to following rules in CAPES Intensity, refined from *mengikuti aturan* (following rules) to *mematuhi aturan* (obeying rules); and a word referring to foster fathers/mothers in the FBQ, refined from *ayah/ibu wali* (guardians) to *ayah/ibu asuh* (foster mothers/fathers).

Data Analyses

Construct validity

The construct validity of the PAFAS was evaluated via CFA using Mplus version 7.31 (Muthén and Muthén 1998–2012). In the next step, the convergent and discriminant validities, as well as the predictive validity of the Indonesian PAFAS were assessed.

Convergent and discriminant validity

Convergent validity was evaluated using three complementary methods: (i) the evaluation of the significance and magnitude of factor loadings (Gerbing and Anderson 1988), (ii) inspection of whether the amount of variance shared between the construct and its indicators is at least 50% (AVE > .50; Fornell and Larcker 1981), (iii) evaluation of the composite reliability (CR), where values above 60 indicate good convergent validity (Bagozzi and Yi 1988). Discriminant validity was assessed using three approaches: evaluation of the magnitude of correlation coefficients between the latent constructs, the Wald test, and comparisons between AVE and the squared inter-construct correlation estimates (SIC). For good discriminant validity the standardized correlation coefficients between the constructs should not be equal or close to 1.00. To formally test this, we used the Wald chi-square test and applied the *Model test command* in Mplus (Muthén and Muthén 1998–2012). In this test, the correlation between the two latent

constructs is set to be equal to 1 and a significant *p*-value indicates that this correlation is not equal to 1. Finally, the SIC estimates give the magnitude of the shared variance between the constructs. These values should be lower than the amount of variance shared between the construct and its indicators (AVE) for good discriminant validity (SIC; Fornell and Larcker 1981).

Predictive validity

The predictive validity of the Indonesian version of PAFAS was assessed by examining the magnitude of correlation coefficients between PAFAS and CAPES. In particular, we evaluated the associations between Parenting practices and Family adjustment of PAFAS and Child maladjustment and Self-efficacy of CAPES. The analyses were performed in the latent spaces using Mplus. In addition, we used Structural Equation Modelling (SEM) in Mplus to thoroughly evaluate the theoretical model of associations between the constructs measured by PAFAS and CAPES as illustrated in Fig. 1. Research has shown that family adjustment, such as parenting stress, marital conflict, and parental teamwork, influence child adjustment directly or indirectly through parenting (Anthony et al. 2005; Gartstein and Fagot 2003; Schoppe Mangelsdorf and Frosch 2001). Similarly, parental self-efficacy has been found to affect child adjustment either directly or indirectly via parenting practices (Jones and Prinz 2005; Sanders and Woolley 2005). Parental self-efficacy was also found to be associated with parental stress and depression, as well as family adjustment (Jones and Prinz 2005; Sevigny and Loutzenhiser 2010). Based on this, we predicted that parenting practices would mediate the relationships between family adjustment and child maladjustment, as well as between parental self-efficacy and child maladjustment. We also expected that family adjustment would be associated with parental self-efficacy, which, in turn, would impact child maladjustment.

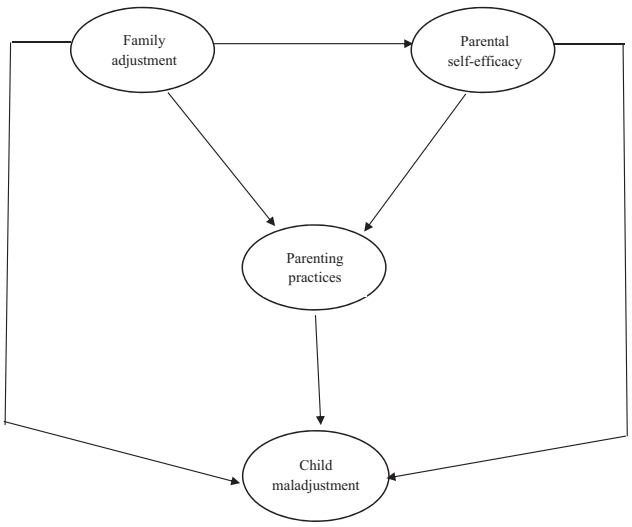

Fig. 1 Hypothesized model of the relationships between family adjustment, parental self-efficacy, parenting practices and child maladjustment

Models estimation

The robust maximum likelihood estimator (MLR) was used in all analyses because the PAFAS items were on an ordinal scale and the data violated normality assumptions (see Preliminary analysis). The MLR generates fit indices with standard errors that are robust to non-normality (Muthén and Muthén 1998–2012). In this case, the standard errors are calculated using a sandwich estimator and the chi-square goodness-of-fit statistic is computed using Yuan's and Bentler's formula (Yuan and Bentler 2000). For both CFA and SEM analyses the fit indices used to evaluate the models included the chi square goodness-of-fit statistics, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Model fit was considered acceptable if the CFI was above .90, and the RMSEA and SRMR were below .08 (Bentler 1992; Hu and Bentler 1999). Modification Indices (MIs), standardized residuals and theoretical considerations were also used to respecify the models (Kline 2011). Since the analyses did not involve comparing the nested models, we used Akaike information criterion (AIC) and Bayesian information criterion (BIC) to compare the non-nested models, where lower values indicate a better fitting model (Brown 2006). For the CFA analyses, we used a standardized factor loading of .40 or higher as a cut-off point to retain an item for further analysis (Brown 2006). For the SEM analyses, the hypothesized mediation effects were tested via bootstrap method with 2000 bootstrap samples (Shrout and Bolger 2002)

Reliability

We used the H coefficient to measure the internal consistency of the Indonesian version of the PAFAS as it is more appropriate than Cronbach's alpha when the assumptions of tau-equivalence and uncorrelated error terms are violated (Sijtsma 2008; Yang and Green 2011). Similar to Cronbach's alpha, the H coefficient ranges from 0 to 1, with values above .70 indicating good internal consistency. However values as low as .60 are still considered acceptable (Hancock and Mueller 2001).

Results

The dataset consisted of 210 parents, with only 0.79% of values missing. The Full Information Maximum Likelihood

Table 1 Confirmatory factor analysis of the factor structure of the Indonesian version of PAFAS parenting

Model	χ^2	df	CFI	SRMR	RMSEA	RMSEA 90% CI	AIC	BIC
PAFAS Parenting[a]								
A. 1-factor model	886.36***	350	.560	.102	.085	.078–.092	12204.01	12485.17
B. 4-factor model	238.28***	129	.829	.074	.064	.051–.076	7523.17	7723.99
B1. 4-factor model with items 3 and 11 removed	164.73***	98	.884	.057	.057	.041–.072	6527.28	6708.02
B2. 4-factor model with item 3, 11, and 2 removed	145.86***	84	.888	.057	.059	.043–.075	6059.14	6229.84
B3. 4-factor model with item 3, 11, 2 removed and item 15 moved into the third factor	130.86***	84	.915	.056	.052	.033–.068	6042.67	6213.370
PAFAS Family adjustment[b]								
C. 1-factor model	297.01***	54	.574	.096	.147	.131–.163	4759.27	4879.59
D. 3-factor model	251.23***	51	.649	.083	.137	.120–.154	4678.54	4808.89
D1. 3-factor model with item 29 removed	226.38***	41	.648	.085	.147	.129–.166	4163.22.	4283.54
D2. 3-factor model with item 29 and 27 removed	135.98***	32	.751	.070	.125	.104-.147	3727.22	3837.51
D3. 3-factor model with items 29, 27, and 19 removed	64.79***	24	.877	.057	.090	.064–.117	3248.39	3348.66
D4. 3-factor model with items 29, 27, 19, and 23 removed	25.67*	17	.97	.045	.049	.000–.086	2912.65	3002.89

Note: χ^2 = Sattora–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 information criterion, *BIC* Bayesian information criterion

[a] The analyses conducted on $N = 210$ individuals

[b] The analyses were based on $N = 209$ individuals

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

(FIML) procedure was used to handle missing data, which is considered more robust than traditional approaches (Graham 2009). In terms of normality assumptions, twenty-four out of 30 PAFAS items (80%) had significant univariate skew and 18 out of 30 PAFAS items (60%) had significant univariate kurtosis. The Mardia's test of multivariate kurtosis showed a coefficient of 1100.34 with CR of 22.65 ($p < .001$) indicating multivariate non-normality of the data. To obtain accurate estimates of standard errors and chi-square values for the models we used MLR estimator (See Data analysis section).

Construct validity

For PAFAS Parenting, a single factor model was tested first and compared to the hypothesized four-factor model. The four-factor model showed a better fit than the one-factor model (see Table 1, Model A and B), hence it was chosen for further analysis. However, based on CFI, the fit of the four-factor model was not satisfactory. Inspection of factor loadings indicated that items 3 "I follow through with a consequence (e.g., take away a toy when my child misbehaves" and 11 "I deal with my child's misbehavior the same way all the time" of Parental consistency had very low factor loadings and were removed from the model. This improved model fit, but it was still not satisfactory based on the CFI value (see Table 1, Model B1). Further inspection of factor loadings and standardized residuals indicated that item 2 "I give my child a treat, reward or fun activity for behaving well" of Positive encouragement had a low factor loading (<.40) and large standardized residuals and thus, was removed. Following deletion, the CFI of the 15-item model increased but was still inadequate (see Table 1, Model B2). Examination of MIs suggested strong association of item 15 "I enjoy giving my child hugs, kisses and cuddles" of Parent-child relationship with Positive encouragement. Given the high MI and that this item could be interpreted as a positive encouragement strategy, we specified item 15 as an indicator of Positive encouragement. This final model showed acceptable fit to the data (see Table 1, Model B3).

As illustrated in Fig. 2, the factor loadings ranged from satisfactory to high (.40–.79). Most associations between the latent factors were not significant, with the exception of the significant positive correlations between Parental consistency and Coercive parenting ($r = .50$; $p < .05$) and between Positive encouragement and Parent-child relationship ($r = .78$, $p < .001$).

With respect to PAFAS Family adjustment, we firstly compared a single factor model with the hypothesized three-factor model. The results showed that the fit of the hypothesized model was better than the fit of the one-factor model (see Table 1, Model C and D). Hence, we selected the three-factor model for further analyses. The overall fit of the three-factor model was poor. Inspection of standardized factor loadings indicated that item 29 "I disagree with my partner about parenting" of Parental teamwork needed to be removed due to the low factor loading. However, this only

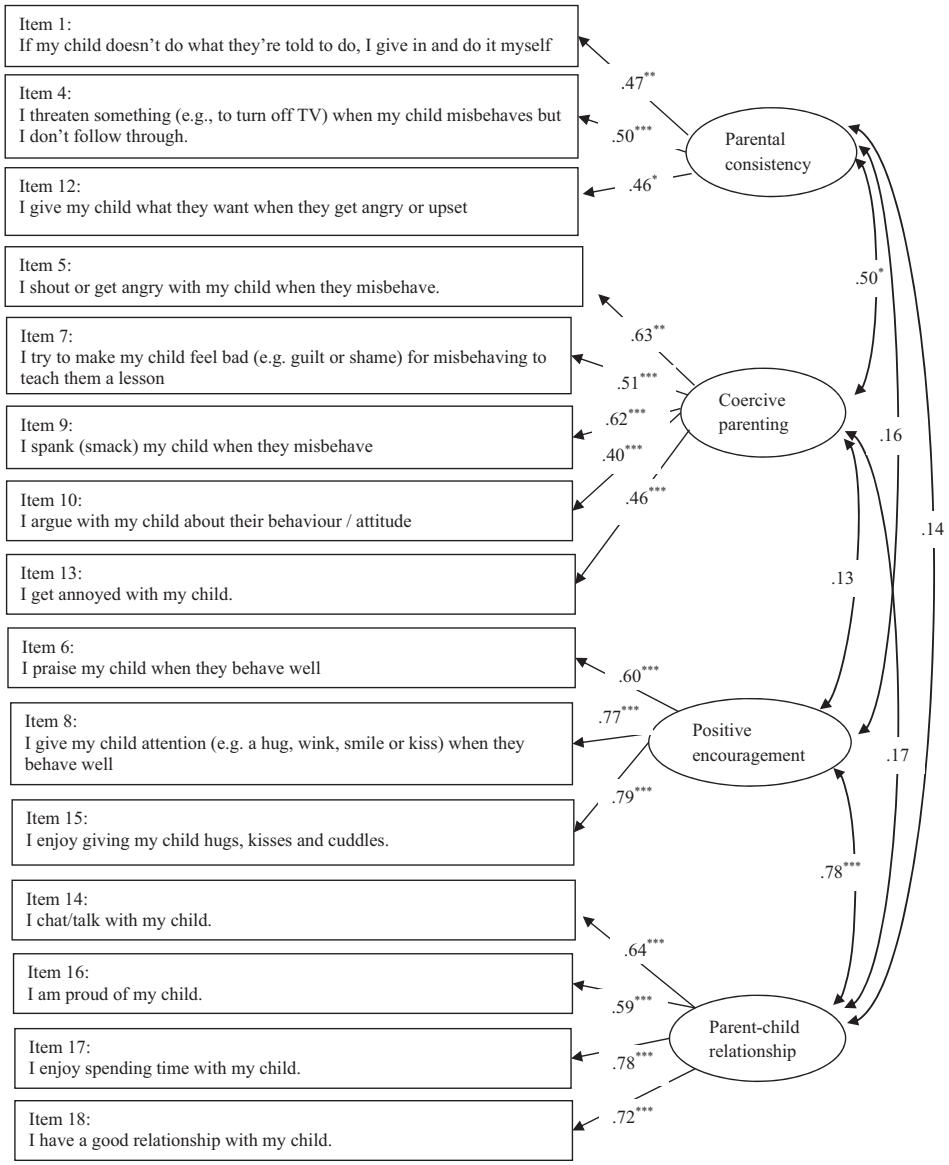

Fig. 2 Four-factor confirmatory factor analysis of the 15-item Indonesian version of PAFAS Parenting. Standardized estimates are presented. Higher scores indicate higher level of dysfunctional parenting. *$p < .05$, **$p < .01$, ***$p < .001$

slightly improved model fit (see Table 1, Model D1). Inspection of standardized residuals suggested that item 27 "Our family members criticize or put each other down" of Family relationships should be removed. This improved the model fit, however it was still not satisfactory based on the CFI and RMSEA values (see Table 1, Model D2). Further examination of standardized residuals indicated that items 19 "I feel stressed or worried" and item 23 "I cope with the emotional demands of being a parent" of Parental adjustment needed to be removed (Model D3 and D4, respectively). The final model showed very good fit to the data (see Table 1, Model D4).

Figure 3 illustrates the final model with 3 latent factors and 8 items. The factor loadings ranged from satisfactory to high (.44–.83). There were significant positive correlations between Parental adjustment and Family relationships ($r = .59$, $p < .001$), Family relationships and Parental teamwork ($r = .71$, $p < .001$), and Parental adjustment and Parental teamwork ($r = .64$, $p < .001$).

Convergent and Discriminant Validity

In terms of convergent validity, all items of PAFAS Parenting and PAFAS Family adjustment had significant and satisfactory loadings on the designated factors (see Figs. 2 and 3). For PAFAS Parenting, the AVE estimate for Positive encouragement exceeded the cut-off value of .50 (.52), but for the remaining three factors the AVE estimates were below the cut-off value (see Table 2). Similarly, for PAFAS Family adjustment, the AVE estimate for Parental teamwork was satisfactory (.59) but for Parental adjustment and Family relationships, the AVE estimates were slightly below the required cut-off value of .50. The CR estimates were satisfactory (i.e., above .60) for PAFAS Parenting,

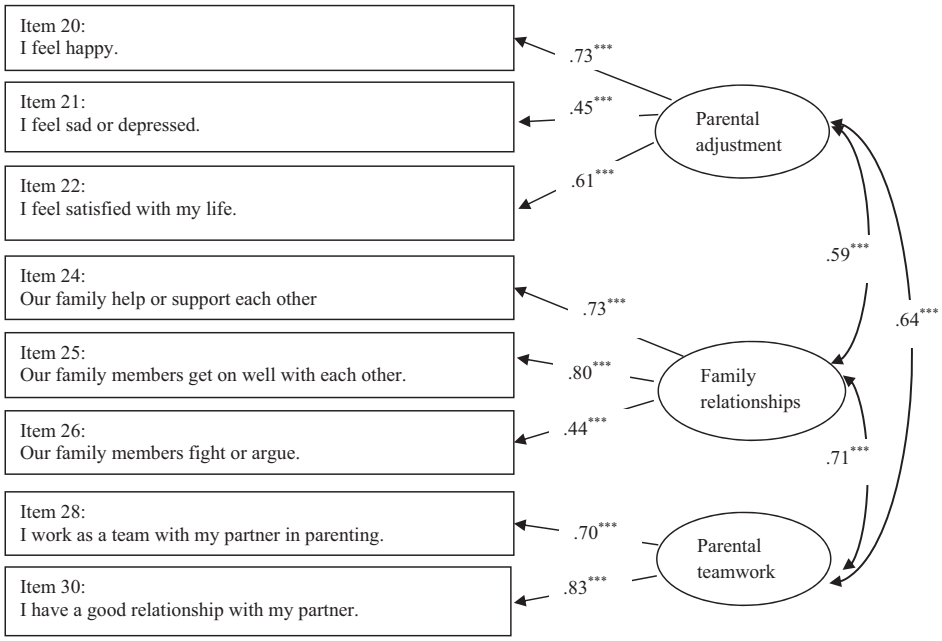

Fig. 3 Three-factor confirmatory factor analysis of the 8-item Indonesian version of PAFAS Family adjustment. Standardized estimates are presented. Higher scores indicate higher level of dysfunctional parenting. ***$p < .001$

Table 2 Average variance extracted (AVE) as compared with squared intercorrelation estimates (SIC) for the PAFAS parenting and PAFAS family adjustment

	AVE	SIC
PAFAS Parenting		
Parental consistency	.23	.25, .03, .02
Coercive parenting	.28	.25, .13, .03
Positive encouragement	.52	.03, .13, .61
Parent-child relationship	.47	.02, .13, .61
PAFAS Family adjustment		
Parental adjustment	.37	.34, .40
Family relationships	.46	.34, .50
Parental teamwork	.59	.40, .50

AVE average variance extracted, *SIC* squared interconstruct correlation

Positive encouragement, Parent-child relationship, and Coercive parenting (i.e., .77, .78, and .66, respectively), and for all the PAFAS Family adjustment factors (i.e., .63 for Parental adjustment, .70 for Family relationships, and .74 for Parental teamwork). However, the CR estimate for Parental consistency was low (.47).

With respect to discriminant validity, the correlations between latent factors of PAFAS Parenting were low and insignificant with the exception of the association between Parental consistency and Coercive parenting ($r = .50$, $p < .05$) and Positive encouragement and Parent-child relationship ($r = .78$, $p < .001$; see Fig. 2). The results of Wald chi-square test for magnitude of these associations indicated that these correlations were not equal to 1.00 (493.51 and 3908.90, respectively, with $p < .001$). For PAFAS Family adjustment, the correlations between latent constructs were significant and moderate in size (see Fig. 3). The results of the Wald chi-square test showed that they were not equal to 1.00. The Wald chi-square values were 655.1, 1736.5, and 815.26, all $p < .001$ for the correlations between Parental adjustment and Family relationships; Parental adjustment and Parental teamwork; and Family relationships and Parental teamwork, respectively.

Table 2 shows the comparisons between AVE and SIC estimates for each factor. Coercive parenting and Parental teamwork had good discriminant validity. Yet, for the remaining factors of PAFAS Parenting and PAFAS Family adjustment, the AVE estimates were lower compared to the SIC estimates indicating high amount of shared variance between these constructs.

Predictive Validity

The predictive validity of PAFAS Parenting and PAFAS Family adjustment was examined in two steps. First, we examined the bivariate correlations between the scales of PAFAS and CAPES (see Table 3). Almost all constructs of PAFAS Parenting and Family adjustment were significantly correlated in the expected directions with the constructs of CAPES Intensity and Self-efficacy. However, the associations between Behavior problems and Positive encouragement and Parental adjustment; Emotional problems and Positive encouragement, Parental adjustment, and Parental teamwork; and Self-efficacy and Coercive parenting were not significant.

In the next step, we examined if the latent factors of PAFAS Parenting and PAFAS Family adjustment would predict parental efficacy and child emotional and behavioral

Table 3 Correlations between PAFAS parenting, PAFAS family adjustment, and CAPES

Variables	1	2	3	4	5	6	7	8	9	10
PAFAS-parenting										
1. Parental consistency	–									
2. Coercive parenting	0.45*	–								
3. Positive encouragement	0.13	0.13	–							
4. Parent-child relationship	0.15	0.19	0.76***	–						
PAFAS-family adjustment										
5. Parental adjustment	0.22	0.43	0.22	0.60***	–					
6. Family relationships	0.09	0.18	0.31*	0.49***	0.66***	–				
7. Parental teamwork	0.16	0.08	0.20	0.39**	0.68***	0.71***	–			
CAPES										
8. CAPES-behavior problems	0.55***	0.59***	0.11	0.33**	0.48	0.27**	0.27**	–		
9. CAPES-emotional problems	0.32*	0.40**	0.23	0.24*	0.31	0.27*	0.20	0.55***	–	
10. CAPES- self efficacy	−0.33*	−0.12	−0.29**	−0.47***	−0.27*	−0.42***	−0.31**	−0.47***	−0.35**	–
Mean	3.15	5.91	0.90	1.23	1.76	1.63	0.75	22.68	1.53	155.68
SD	1.81	2.83	1.43	1.62	1.52	1.54	1.08	8.93	1.54	25.06
Internal consistency	.47	.68	.79	.79	.67	.76	.76	.84	.58	.96

Note: High scores in the PAFAS subscales and CAPES-Behavior and Emotional Problems denote negative interpretations, whereas high scores in CAPES-Self efficacy denote positive interpretation. The internal consistency of the CAPES was measured using Cronbach's Alpha. The internal consistency of the PAFAS was measured using the H coefficient

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

problems as measured by CAPES. The SEM approach was applied to test the hypothesized model of associations (see Fig. 1). Given that CAPES Behavior problems and Self-efficacy scales have more than 15 items each, item parceling was applied for these scales in order to control for inflated measurement errors and improve the psychometric properties of the variables (Little et al. 2002). Behavior problem items were randomly assigned to five parcels, whilst Self-efficacy items were randomly assigned to four parcels. Each parcel represented the average of the items included. The fit of the initial model was not satisfactory (i.e., χ^2 (113) = 220.68, $p < .001$; CFI = .932; SRMR = .089; RMSEA = .068 [90% CI .054–.081]). Inspection of MIs suggested that combining Parental consistency and Coercive Parenting into one latent construct and similarly combining Positive encouragement and Parent-child relationships into one latent construct would significantly improve model fit. This suggestion was theoretically sensible. In addition, these constructs showed high correlations with each other in the CFA analysis (See Fig. 2). The two combined latent constructs were named: Effective and Ineffective parenting practices. The revised model showed very good fit to the data (χ^2 (209) = 170.17, $p < .001$; CFI = .962; SRMR = .062; RMSEA = .051 [90% CI .035–.065]). The standardized results are presented in Fig. 4.

The analyses revealed that family adjustment was significantly associated with parental self-efficacy and both effective and ineffective parenting practices, implying that the poorer the family functioning the lower the level of parental self-confidence and effective parenting practices and the higher the level of ineffective parenting practices (i.e., less consistency in parenting, more frequent use of coercive practices, less frequent use of positive encouragement to poorer relationships between a child and a parent). Furthermore, parental self-efficacy was significantly related to effective parenting practices indicating that the higher parental confidence the more frequent the use of positive parenting strategies such as encouragement and consistency. Surprisingly, there was no significant relationship between self-efficacy and ineffective parenting practices, as well as between ineffective and effective parenting. Furthermore, the results showed that parental self-efficacy and ineffective parenting practices had direct relationships with child maladjustment, indicating that either lack of parental self-confidence or harsh and inconsistent parenting could lead to child emotional and behavioral problems. No significant relationship was found between effective parenting and child maladjustment. Overall, the model explained 47% of variance in child maladjustment.

Figure 4 illustrates two significant parallel indirect effects that were tested in subsequent analyses using bootstrapping method (see Data analysis section). One is the path from family adjustment to child maladjustment mediated by parental self-efficacy ($\beta = 0.14$, $p < .01$), and the second path was through ineffective parenting practices ($\beta = 0.09$, $p < .05$). The estimates of total indirect effects

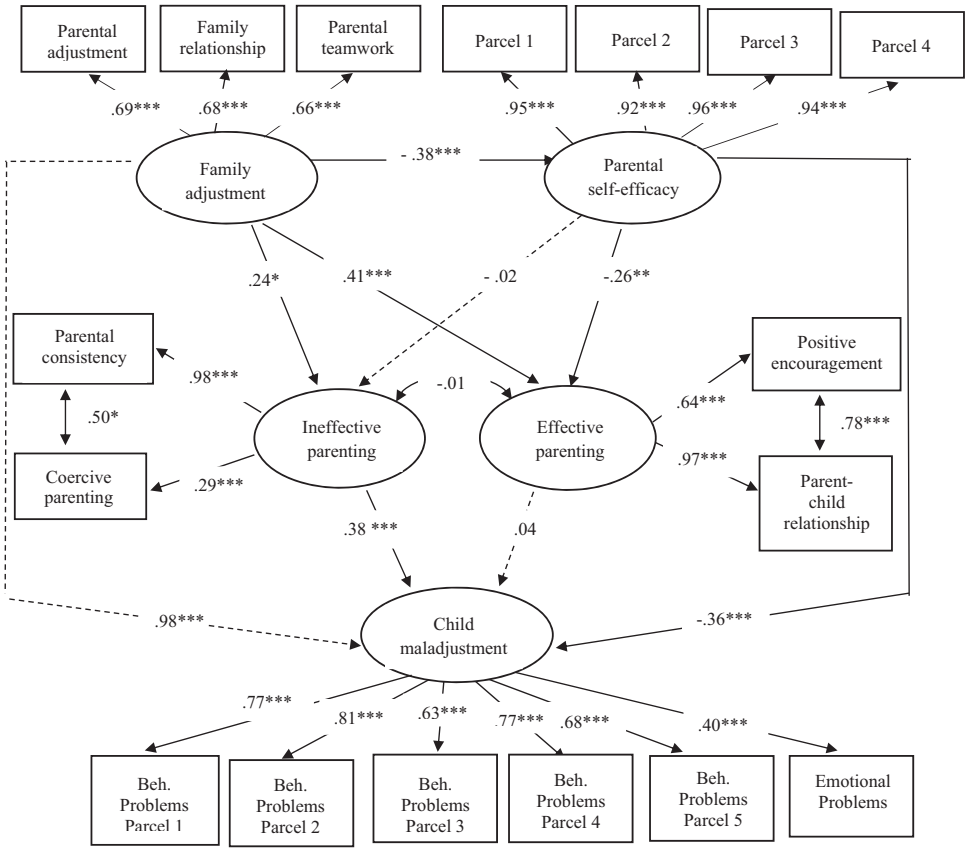

Fig. 4 Structural Equation Model of the direct and indirect relations between family adjustment, parental self-efficacy, parenting practices and child maladjustment in Indonesia. Standardized regression coefficients are presented. High scores in family adjustment, effective and ineffective parenting, and child maladjustment denote negative interpretations (i.e., poorer family adjustment, higher levels of dysfunctional parenting, and more frequent child emotional and behavioral problems), whereas high scores in parental self-efficacy denote positive interpretations (i.e., higher levels of parenting confidence). $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

and total effects of family adjustment on child maladjustment were 0.25 ($p < .001$) and 0.46 ($p < .001$), respectively.

Reliability

As seen in Table 3, the H coefficients for Positive encouragement, Parent-child relationship, Family relationships and Parental teamwork were all greater than .70, indicating very good internal consistently. The H coefficients for Coercive parenting and Parental adjustment were .68 and .67, respectively, indicating satisfactory internal consistency. Finally, Parental consistency had low H coefficient (.47) implying poor internal consistency.

Discussion

This study aimed to assess the validity of a brief, but comprehensive, parenting and family adjustment measure in the Indonesian context. The construct validity of the PAFAS was evaluated through CFA and its predictive validity was assessed through its associations with a child outcomes measure (CAPES). Based on the results of CFA, the Indonesian version of PAFAS Parenting comprised four-factors with 15 items and PAFAS Family adjustment comprised three-factors with 8 items. Similar to the results of validation studies in China (Guo et al. 2016) and Panama (Mejia et al. 2015), the Indonesian PAFAS had fewer items than the original version with an Australian population (Sanders et al. 2014). The correlational analyses and SEM showed that most constructs of PAFAS were significantly associated in the expected directions with the constructs of the CAPES. The overall results indicate that the PAFAS is a promising measure that could capture some aspects of parenting practices and family adjustment of Indonesian parents.

CFA resulted in a shorter (15-item) version of PAFAS Parenting in Indonesia. Three items were deleted from the model; that is, items 3 "I follow through with a consequence (e.g., take away a toy) when my child misbehaves", 11 "I deal with my child's misbehavior the same way all the time", and 2 "I give my child a treat, reward or fun activity for behaving well". The first two items had negative factor loadings on Parental consistency. This might indicate that Indonesian parents perceived these items as ineffective parenting practices. This is similar to the results in the previous validation studies of PAFAS in collectivistic cultures, namely with Chinese and Panamanian parents (Guo et al. 2016; Mejia et al. 2015), suggesting that the two items may not be culturally appropriate in the non-Western context. As a harmonious relationship is highly valued in collectivistic cultures, conflicts in parent-child relationships

should be resolved immediately (Keshavarz and Baharudin 2009; Trommsdorff and Kornadt 2003). Parents in these cultures might use different strategies than the one indicated in item 11 to manage their child's misbehavior and increase child compliance, including using threatening without following through (Koentjaraningrat 1985; Sumargi et al. 2015b). Further studies using qualitative methods are required to test this hypothesis. Item 2 was deleted due to a low factor loading on Positive encouragement and large standardized residual. This indicates that this item did not measure positive encouragement in this sample. In addition, based on the inspection of MIs, we moved item 15 "I enjoy giving my child hugs, kisses and cuddles" from Parent-child relationship to Positive encouragement. The item loaded positively and significantly on Positive encouragement. This suggests that Indonesian parents use strategies such as hugging, kissing, and cuddling with the main purpose of encouraging and supporting their children rather than building and maintaining a positive relationship with them. The final 15-item model showed acceptable fit to the data with satisfactory to high factor loadings.

Contrary to the findings from the Australian study (Sanders et al. 2014), not all relationships between PAFAS Parenting scales were significant. Significant associations were found between Parental consistency and Coercive parenting, and between Positive encouragement and Parent-child relationship. This indicates that parents who showed inconsistent parenting practices also used a coercive approach in parenting their children (ineffective parenting practices) and parents who showed positive encouragement to their child had good relationships with their child (effective parenting practices). However, there were no significant associations between ineffective and effective parenting practices (Figs. 2 and 4), indicating that higher or lower levels of ineffective parenting practices are not necessarily followed by lower or higher levels of effective parenting practices. These results are similar to the findings obtained in the Chinese validation of PAFAS (Guo et al. 2016), suggesting the unique characteristics of parenting practices in collectivistic culture where parents can be warm and supportive but at the same time demanding and strict (Chao and Tseng 2002). In the cross-cultural literature, this is often referred to as a warm authoritarianism (Kagitcibasi 2007). However, qualitative studies are needed to confirm if indeed this is the case for Indonesian parents.

With respect to PAFAS Family adjustment, the analysis revealed a three-factor model with 8 items. Four items were removed from the original scale to make the entire scale valid. These were item 29 "I disagree with my partner about parenting", 27 "Our family members criticize or put each other down", 19 "I feel stressed or worried", and 23"I cope with the emotional demands of being a parent". Except for item 23, all removed items were exactly the same as the items deleted from the model in the validation study of PAFAS Family adjustment with Panamanian parents (Mejia et al. 2015). The deleted items describe disagreement in family relationships and negative emotional states. Similar to Latino cultures, Indonesian cultures, in particular the Javanese culture, emphasize the importance of harmonious relationships with other people (Koentjaraningrat 1985). Even in marital relationships, husbands and wives often avoid open conflict, do not disclose their anger, and use silent expressions when fighting (i.e., not talking to each other for a period of time; Megawangi et al. 1995). This may explain the low means on both of these items ($M = 0.65$ and $M = 0.87$ for items 27 and 29, respectively). Additionally, participating parents could have displayed social desirability when completing the scale believing that problems within a family should not be disclosed to outsiders. All this suggests that the deleted items in PAFAS Family adjustment might not be culturally relevant for Indonesian families. This requires further investigation, preferably using qualitative methods.

The convergent validity for both PAFAS Parenting and PAFAS Family adjustment was adequate as measured by the significance and magnitude of factor loadings. The estimates of composite reliability for all scales were also satisfactory, except for Parental consistency. However, the inspection on the AVE estimates indicated that there were more errors than variances explained by the factors for Parental consistency, Coercive parenting, and Parental adjustment. With regards to discriminant validity, the correlations between factors of PAFAS Parenting and PAFAS Family adjustment were not close or equal to 1.00 as revealed by the Wald chi-square tests; providing evidence for independence of these constructs. Nonetheless, the comparisons between the AVE and SIC estimates indicated higher amount of shared variance between Parental consistency and Coercive parenting and between Positive encouragement and Parent-child relationship in PAFAS Parenting, as well as between Parental adjustment and Parental teamwork, and between Family relationships and Parental teamwork in PAFAS Family adjustment. Thus, further research should thoroughly examine these scales and modify the items if necessary, to improve the convergent and discriminant validity of the Indonesian version of PAFAS.

The predictive validity of PAFAS Parenting and PAFAS Family adjustment was good, as indicated by correlational and SEM analyses evaluating its associations with the CAPES. The hypothesized model of relationships between parent, family and child constructs showed good fit to the data. The results indicated two significant indirect effects. These effects imply that in the Indonesian context the overall family adjustment influences child maladjustment through two parallel processes: ineffective parenting

practices and parental self-efficacy. This shows that poor family functioning is associated with higher use of ineffective parenting practices (such as coercive parenting and lack of consistency) and lower parental self-efficacy, which in turn have negative effects on child adjustment. These findings suggest that family maladjustment, parenting practices (in particular ineffective parenting), and parental self-efficacy are possible risk factors for child maladjustment in Indonesia and should be specifically targeted in prevention and intervention programs. It is, therefore, important to further explore the potential use of PAFAS Family adjustment and Parenting (Parental consistency and Coercive parenting) as well as CAPES Self-efficacy in clinical settings and parenting intervention studies in Indonesia.

The unexpected findings in this study were non-significant relationships between parental self-efficacy and ineffective parenting, between ineffective and effective parenting, and between effective parenting and child maladjustment (Fig. 4). In collectivistic cultures, parents, particularly mothers, have close relationships with their child, but at the same time, they can be strict and controlling in order to instill interdependence, such as obedience to authorities and maintaining good relationships with others (Triandis 1995). Indonesian-Javanese parents, for example, teach their child to control his or her behavior (self-restraint) by arousing feelings of fear (*wedi*) to authorities and feeling of shame (*isin*) that others will negatively evaluate his or her misbehavior or disobedience (Megawangi et al. 1995). Thus, Indonesian parents can show both effective and ineffective parenting practices, and these might reflect their caring for their children (Chao and Tseng 2002). Globalization has introduced Western values, and thus not all parents from collectivistic cultures hold strong interdependence values and instill these to their child (Triandis 1995). For this reason, it seems plausible that ineffective and effective parenting practices were not significantly related. Along the same line, parents holding high collectivistic values might employ ineffective parenting practices irrespective of whether they have parenting confidence or not in dealing with their child's misbehavior. The non-significant relationship between effective parenting and child maladjustment might be explained by the availability of emotional support from other child caregivers. Twenty-six percent of parents in this study lived with their extended family members and 38% out of 170 participating parents shared child caretaking with grandparents and relatives. Thus, for some children, lacking positive encouragement and warm relationships from parents might not be detrimental as the other child caregivers had provided this affection. Notably, further investigation is necessary to test all these premises.

The estimates of internal consistencies of PAFAS were good or acceptable, with the exception of Parental consistency. The H coefficient for this scale was low, which is consistent with the finding with Chinese parents (Guo et al. 2016). This may be related to the specific characteristics of parenting practices of Asian parents. Similar to Chinese parents, Indonesian parents seem to emphasize more flexibility than consistency in parenting their children. Literature has indicated that Indonesian parents from the Javanese culture tend to encourage dependency and use inconsistent and lenient parenting strategies, such as threatening, to their younger children (Geertz 1961; Megawangi et al. 1995). This is due to the belief that younger children have limited understanding and cognitive capacities. When children grow older, Indonesian parents start to give more responsibilities and use more punishment to control or manage child's misbehavior (Megawangi et al. 1995). Further research is needed into the construct of Parental consistency in non-Western cultures.

Limitations

There were several limitations of this study that should be considered in future research. Although the Indonesian version of the PAFAS has good construct and predictive validity, further work is still needed to improve the convergent and discriminant validity, as well as the internal reliability of Parental consistency. A qualitative approach to explore Indonesian parents' views towards parental consistency is suggested in order to develop culturally appropriate PAFAS items.

It should also be noted that in this study, a back translation procedure was not conducted; however, the translation was reviewed and tested in a small sample of parents to ensure its accuracy. Further, due to a paucity of a validated child-outcome measures in Indonesia, the CAPES was used for testing the predictive validity of PAFAS. The CAPES has not been validated in Indonesian culture which may represent a limitation; however, the internal consistencies of the measure in two intervention studies with Indonesian samples of parents were good (Sumargi et al. 2014, 2015a). Future studies should employ more robust procedures and include various parenting and child-outcome measures to further validate the Indonesian PAFAS.

This study is a cross-sectional study where data were collected at one point in time. The nature of this study limits causal interpretations. It is plausible that for example, family adjustment, parental self-efficacy, and parenting practices as shown in Fig. 4 are influenced by child emotional and behavioral problems and their relationships with child behavior are bidirectional. Furthermore, the age range of children in this study was quite wide and parenting practices might depend on children's age and behavior. To eliminate this possibility, future studies should include a longitudinal design and limit the age range of children.

Another limitation is the representativeness of the sample which can reduce generalizability of the findings. The sample in this study was not representative of the ethnically diverse population of parents in Indonesia. Most participating parents were Javanese (58%) and Chinese descendants (20%). The percentages of these ethnic groups were higher than those in Indonesian population (i.e., 40 and 2% for Javanese and Chinese, respectively; Na'im and Syaputra 2011). Furthermore, the participating parents had high levels of education (i.e., 80 and 19% held a college degree and secondary education qualifications, respectively) and good financial status (i.e., 67% could meet their essential needs and only 28% had financial difficulties). This is not representative of the Indonesian population as there were only a limited number of Indonesians enrolled in tertiary education (31%), and poverty is not uncommon (United Nations Development Programme 2016). Future studies should extend the findings to include Indonesian parents from different socioeconomic and cultural backgrounds. Employing cluster or stratified random sampling, rather than convenience sampling might be relevant. With a more diverse sample, it would be possible to take into account the influences of demographic characteristics of participants, such as educational level and financial difficulties, on the studied variable.

Additionally, this study did not include clinical samples, and therefore, the findings can only be generalized to non-clinical populations. Future studies should extend the work to include clinical samples and test if the Indonesian version of PAFAS is sensitive enough to differentiate clinical cases from non-clinical populations. Having normative values for PAFAS will be beneficial for parenting intervention studies and clinical works with Indonesian families.

Despite these limitations, the Indonesian version of PAFAS shows promise as an easy to administer, quick and reliable measure that has the potential to be very useful for evaluating parenting practices and family functioning among Indonesian populations of parents. The results also suggest that Indonesian parents have some unique parenting practices that are more similar to parents from other collectivistic cultures (Chinese and Panamanian) than to parents from Western cultures, such as Australia. There is a need for future validation studies including parents from Western and Eastern cultures and employing both quantitative and qualitative methods to clarify differences in parenting practice across cultures.

Author Contributions A.S. designed and executed the study, conducted data analyses, and wrote the paper. A.F. assisted with data analyses, collaborated with the design, writing, and editing the final manuscript. A.M. collaborated with the design and editing the final manuscript. K.S. collaborated with the design and editing the final manuscript.

Compliance with Ethical Standards

Conflict of Interest The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: The Parenting and Family Support Centre is partly funded by royalties stemming from published resources of the Triple P—Positive Parenting Program, which is developed and owned by The University of Queensland (UQ). Royalties are also distributed to the Faculty of Health and Behavioural Sciences at UQ and contributory authors of published Triple P resources. Triple P International (TPI) Pty Ltd is a private company licensed by Uniquest Pty Ltd on behalf of UQ, to publish and disseminate Triple P worldwide. The authors of this report have no share or ownership of TPI. Dr Morawska receives royalties from TPI. TPI had no involvement in the study design, collection, analysis or interpretation of data, or writing of this report. Dr Morawska is an employee at UQ.

Ethical Approval The ethical approval was obtained from the University of Queensland.

Informed Consent Informed consent was obtained from all participants in the study.

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