Perceptions of Parenting Behavior by Adolescents: The Development of the Malaysian Parenting Behavior Inventory

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ABSTRACT

We conducted a study with the aims of examining adolescents' perceptions of their mother's and father's parenting behavior and developing a new Malaysian Parenting Behavior Inventory (MPBI). In Phase One, we recruited 903 adolescents using the proportionate to size sampling technique. The results of the exploratory factor analyses of the MPBI Mother and Father scales revealed four underlying factor structures: Warmth, Monitoring, and Harsh Discipline were somewhat similar to those in past findings and theory, and Indigenous centered on religious and cultural values in parenting. In Phase Two, using an independent sample of adolescents, we replicated the factor structure of Study One with confirmatory factor analysis, resulting in strong model fit estimates. We conclude that the MPBI has good initial psychometric properties and is culturally influenced. The MPBI may be useful for prevention and intervention programs in clinical and non-clinical settings, including providing valuable information on factors pertinent to parent-adolescent interactions.

Keywords: Adolescent, cultural values, parenting behavior, religious values, scale development

INTRODUCTION

The literature on adolescent development has implicated family and parenting processes as agents for socialization (Janssens et al., 2015). As such, numerous researchers have investigated how parenting affects adolescents' psychological, social, and cognitive outcomes (e.g., Afriani et al., 2012; Hoskins, 2014; Jafari et al., 2016; Keshavarz & Baharudin, 2013; Smokowski et al., 2015; Yap & Baharudin, 2016). Considering the salience of parenting in predicting child outcomes, multiple measures of parenting behaviors have been developed. However, the evaluation of parenting has posed difficulties because of theoretical discrepancies, issues with psychometric properties, and generalizability of extant parenting measures (Reid et al., 2015). Additionally, various parenting dimensions have been identified, resulting in little agreement on how to optimally assess parenting behaviors. A prominent conceptualization of parenting is Baumrind's (1991) parenting style typology (i.e., authoritative, authoritarian, permissive, and rejecting-neglecting) derived from two dimensions, namely, demandingness and responsiveness. Parent and Forehand (2017) suggested three key parenting aspects: warmth, behavioral control, and hostility. In a review by Skinner et al. (2005) of over 40 parenting measures, six dimensions were identified: warmth, chaos, rejection, coercion, autonomy support, and structure.

Despite variations in parenting features, there is a consensus among scholars that parenting is multidimensional. Hence, studies can benefit from an assessment tool that evaluates multiple dimensions of parenting (Skinner et al., 2005). Nevertheless, none of the current measures solely assesses the multidimensionality of parenting, such that, the use of one parenting measure would still require employing another to evaluate both positive and negative features (Parent & Forehand, 2017). Although with no intention of replacing existing measures, the development of a multidimensional parenting measure with sound psychometric properties may be considered as a novel effort to improve parenting measurement.

In Malaysia, parenting behaviors have been assessed using measures originally developed based on a Western, white middle-class population, such as, the Parental Authority Questionnaire (Buri, 1991), Parent-Child Relationship Survey (Fine et al., 1983), and Parental Nurturance Scale (Buri, 1989). While Asian researchers commonly use such established instruments for convenience, doing so could provide erroneous or confusing information. With the exclusive use of Western parenting constructs, researchers might be imposing a framework which leaves out primary associations in non-Western cultures (Stewart et al., 1999). Baumrind's (1966) parenting style model is still widely utilized in Asian studies. However, a parenting style that is viewed as authoritarian by Western parents is commonly associated with positive parenting among Asians. For instance, Filipino parents practice parental authority and control that demand obedience from their children, fulfilment of family

obligation, and family cohesion (Alampay, 2014). Chinese parents likewise tend to express their love and support by controlling and governing their children (Chao, 1994) and less through affection (Wu et al., 2002). Therefore, researchers must consider the cultural uniqueness of non-Western parenting behaviors for child socialization (Hulei et al., 2006). Nonetheless, there is still a scarcity of culture-specific and indigenous Asian parenting constructs in the literature (Kim & Wong, 2002).

Attempts though have been made to develop instruments to measure non-Western parenting. Chao (1994) designed a 13-item scale that assessed *chia shun* or "training," which is an indigenous form of socializing a child characterized by high parental involvement, care, and physical closeness, but still granted parents the authority to establish a standard of conduct. This instrument was based upon an indigenous concept of parental control for the Chinese that is rooted on Confucian traditions, called *guan,* which demonstrates that "parental care, concern, and involvement are synonymous with a firm control and governance of the child" (Chao, 1994, p. 1112). In contrast, Stewart and colleagues (1999) designed a parenting behavior scale that measured universal dimensions (i.e., warmth and dominating control) as well as indigenous items (i.e., shame, family honor, and public opinion) which characterized Pakistani parents. Similarly, Lieber and associates (2006) developed the Chinese child-rearing beliefs questionnaire (CCRBQ) which identified four dimensions

of parenting, two of which were imported from Western parenting concepts (i.e., autonomy and authoritative) and another two that are indigenous to Chinese culture (i.e., training and shame). A number of measures have also been developed to capture an indigenous parenting behavior specific to Korean Americans, called *ga-jung-kyo-yuk*, which emphasizes parental role-modeling, child-rearing practices, respect for parents, family hierarchy and family ties (Choi et al., 2013). Basically, these indigenous parenting concepts and instruments demonstrate cultural beliefs, values, and traditions of Asian parents.

Correspondingly, past literature has revealed that Malaysian parenting behavior is guided by culture (Raj & Raval, 2013). Malaysia, which comprises the Malays (70%), the Chinese (23%), Indians (7%) and Others (1%), has its distinctive culture, including traditions, religion, and language. Malays are predominantly Muslims, while the Chinese are either Buddhists or Christians, and the Indians are mostly Hindus. Nonetheless, Malaysian families share parenting principles in which the values of the family and religious beliefs form the core foundation of parenting (Hossain, 2014). Furthermore, as Malaysia is a relatively collectivist community, the parents, regardless of ethnicity and religion, share collectivist socialization goals that emphasize interdependence and family harmony, deference to the group, and parental authority (Raj & Raval, 2013). These goals are different from those in Western cultures that encourage

independence and autonomy to be effective members of individualistic societies. Given the relevance of religion and other cultural practices to Malaysian parenting, a novel instrument that assesses and captures such indigenous parenting behaviors unique to Malaysians is much needed.

The source of information about parenting behaviors is an equally important component of scale development. Some measures were developed from the parents' perspectives, while others were based on adolescents' perceptions of their parents. There may be discrepancies between parents' self-reporting and adolescents' perceptions of parenting behaviors. Earlier studies have documented that parents tend to evaluate their parenting behaviors as positive (Barry et al., 2008), whereas adolescents in the midst of pursuing their self-identity, autonomy, and independence may show less favorable perceptions of parenting behaviors (Leung & Shek, 2014), especially when their parents fail to exhibit favorable parenting changes that support the autonomy that they need (Wray-Lake et al., 2010). Due to such parent-adolescent discordance in reports of parenting behaviors, employing multiple informants seem to be ideal. Nevertheless, adolescents are deemed reliable and valid sources of information about their parents' parenting behaviors (Huang et al., 2019) inasmuch as they already have a more mature cognitive capacity for perspective taking as well as critical thinking (Steinberg & Morris, 2001). Generally, there is some evidence to indicate that adolescents can provide credible information about their parents' parenting behaviors.

In sum, there is a need to develop a multiple dimensional parenting measure for Malaysian parents. Furthermore, identifying the item content of a novel culturally relevant measure that reflects the current perceptions of parenting among Malaysian mothers and fathers and assessing its psychometric properties is vital.

The Present Study

This study aimed to develop the Malaysian Parenting Behavior Inventory (MPBI) based on adolescents' perceptions. This study was conducted in two phases. In Phase One, we describe the development of the MPBI and the underlying factor structure using exploratory factor analysis (EFA). In Phase Two, we perform a confirmatory factor analysis (CFA) to replicate the factor structures obtained in Study One using a new and independent sample of adolescents.

Phase One

Method.

Participants. Adolescent (N=903) from four selected states (i.e., Perak [N=179000; n= 371; cluster size = 10], Wilayah Persekutuan Kuala Lumpur [N= 84810; n=195; cluster size = 5], Terengganu [N= 91739; n=200; cluster size = 6] and Malacca [N=60632; n=137; cluster size = 4]) representing north, central, east and south of Peninsular Malaysia were selected using the proportionate to size sampling technique. This technique involved selecting clusters with no equal probabilities, but with probabilities proportionate to the cluster size

as measured by the number of units to be subsampled (Babbie, 2017). Adolescents' age spanned from 13 to 19 years (M= 14.43 years, SD= 1.31) and females (56.0%) slightly outnumbered males. There were more Malays (68.9%) compared to other races [Chinese (16.4%), Indian (13.5%), and Others (1.2%)].

Procedure.

Initially, established instruments for measuring parenting behaviors which are suitable for adolescents were compiled. Permissions to utilize existing measurements were obtained from the respective authors. These measurements were translated using a forward-backward translation method. The items were first translated from English to Malay by experts whose mother tongue is Malay and fluent in English. These items were then back translated to English by different experts to ensure consistency in the content of the measure.

Before data collection, we sought permissions from the relevant authorities which includes the Ministry of Education Malaysia, State Education Departments, and schools. Permission from the Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) was also acquired. After obtaining clearance from the respective authorities, we randomly selected two schools to pre-test the questionnaire.

Based on the pre-test, minor revisions were made on the questionnaire prior to conducting the main study. The questionnaires were circulated to the students at the selected school. Students who agreed to participate in the study were requested to fill in a consent form prior to answering the questionnaire. Completed questionnaires were collected during class hours.

Instrument.

Malaysian Parenting Behavior Inventory (MPBI).

We constructed the MPBI based on a review of the literature on the extant measures of parenting behavior and by considering the unique aspects of parenting in Asian cultures. Parenting behaviors pertain to goal-directed and concrete child-rearing strategies and parental duties (Deković et al., 2003). Initially, we selected a range of measures commonly used in measuring adolescents' perception of parenting behaviors: 42-item Alabama Parenting Questionnaire (Shelton et al., 1996); 30-item Childrens' Report of Parental Behavior Inventory (Schludermann & Schludermann, 1988); 25-item Parental Bonding Instrument (Parker et al., 1979); 78-item Parent-Child Relationship Inventory (Gerard, 1994); 32-item How I am Raised (Alvarez, 2007); 45-Ghent Parental Behavior Scale (Van Leeuwen & Vermulst, 2004). From these six measures, 252 items were pooled and reviewed by experts in the field of family parenting and psychology by examining the item accuracy, transparency, duplication, and understandability. Duplicate items were removed, with the remaining items grouped thematically (e.g., all items that represented warmth were placed in the same group).

Next, items were reworded to make them as succinct and clear as possible. Based on the themes, four dimensions that reflected the parenting behavior of Malaysian parents were developed: 1) warmth, referring to parents' behavior of making a child feel loved and accepted; 2) monitoring, referring to parents' efforts in expressing their interest and attention towards their child's whereabouts and activities; 3) harsh discipline, which involves parents' verbal scolding, psychological force, or physical punishment; 4) indigenous behavior, which incorporates cultural and religious aspects of parenting.

Each section of the MPBI was developed independently and can stand alone. The condensed 69-item MPBI was then pre-tested on a sample of 120 adolescents to identify any possible problems (e.g., item wording, ease of understanding, and the way in which the participants read and answered each item). Based on their feedback, 39 items were retained to assess the parenting behaviors of Malaysian parents. These items were reviewed for language reliability by two experts (academicians in the field of family parenting and psychology) who carried out the forward-backward translation procedure. Seven items were dropped because of redundancy or ambiguity. The final versions of the mother and father scales of the MPBI were composed of 32 items each across four dimensions (Warmth [10 items], Monitoring [5 items], Harsh Discipline [6 items], and Indigenous [11 items]) and were rated on a five-point Likert-scale (0=Never to 4= Very often). Considering the response options, a higher cumulative score for a subscale suggests that the respondent more frequently experienced the indicators of that subscale.

Parental Bonding Instrument (PBI). The 25-item Parental Bonding Instrument (PBI; Parker et al., 1979) was utilized to measure parent-child bonding behavior. Participants provided separate responses for their mothers and fathers using a four-point Likert scale from 0 (very unlike) to 3 (very like). The PBI contains two subscales termed 'care' and 'overprotection'. To categorize parents into different parenting bonding groups, both care and overprotection dimensions were dichotomized into high and low groups based on the median scores. For mothers, the median scores for care and overprotection were 27 and 13.5, respectively. For the fathers, the obtained median score was 24 for care and 12 for overprotection. After dichotomization of both dimensions, parents were assigned to four different quadrants. The first quadrant was affectionate constraint, which indicated high scores on both care and overprotection. Parents with high overprotection and low care were categorized into the affectionless control quadrant. Meanwhile, parents with high care and low overprotection were categorized into the optimal parenting quadrant, and parents with low care and low overprotection were categorized into the neglectful parenting quadrant.

Parent's Report (PR). The 56-item Parent's Report (PR; Dibble & Cohen, 1974) scale was designed to measure adolescents' perceptions of their parents' parental behavior. For this study, only 23 items were used and rated using a 7-point scale ranging from 0 (never) to 7 (always). Items 2, 6, 7, 10, 11, 13, 14, 16, 21 and 22 were inverse items. Higher scores indicated a higher quality of perceived parental behavior.

Results and Preliminary Discussion

Demographic Characteristics of Families. Most of the participants had middle-aged parents (M_{mother}=43.68, SD= 6.06; M_{father}=47.72, SD= 6. 41) who were moderately educated. Approximately 62% of the participants belonged to a moderate size family (M=4.14, SD=2.01). Also, most majority (94%) of the participants came from intact families, and only 6% of the participants were from non-intact families due to the death of a parent, divorce or separation. Nearly all (90.8%) of the participants lived with their biological parents, while those who did not rated their caregiver's (i.e., grandparents, foster parents, or external family members) parenting behavior.

Exploratory Factor Analysis. Several steps were performed to investigate the psychometric properties of the MPBI. Firstly, principal axis factoring with oblique rotation (oblimin) was performed on the original 39-item MPBI Mother and Father scales completed by 903 adolescents. Before performing EFA, the data were first screened

for assumptions of normality. Skewness (mother = -.94; father = -.62) and kurtosis (mother = 1.53; father = .45) statistics were examined to identify univariate and multivariate normality. Additionally, outliers were identified using a Mahalanobis distance criteria of p<.001. The Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy (Gorsuch, 1983) (mother = .94; father = .96) and Bartlett's Test of Sphericity (mother: X^2= 17346.95, df = 741, p = 0.00; father: X^2= 22803.73, df = 741, p = 0.00) were tested and both indicated that the MPBI scales were suitable for factor analysis.

Initial analysis indicated that one item from the Mother scale was removed due to low communality (< .30). The remaining items on both the Mother and Father scales were subjected to another EFA. Based on eigenvalues greater than one, a scree plot, and interpretability, a four-factor solution was generated for both the MPBI Mother and Father scales. To obtain a four-dimension structure that permitted meaningful comparisons of mothers and fathers parenting behavior, we selected items that had the highest loading on the expected factors for both parenting behaviors. Hence, seven items (two from Harsh Discipline and five from Monitoring) were excluded from further analyses.

Initially, the evaluation of eigenvalues greater than one indicated that the Mother scale yielded a five-factor solution. However, the scree plot suggested four- to five-factor solutions for the Mother scale. Hence, a parallel analysis (PA; Horn, 1965) was performed to aid in factor retention. Random data sets with similar

size and number of variables as the actual data set were generated based on raw data permutations (Dimitrov, 2012). A comparison was then made between the eigenvalues computed from the analysis and from the actual data. The analysis indicated that four eigenvalues from the raw data were above the 95th percentile estimates but were lower than eigenvalues from the actual data. Therefore, the four-factor solution was supported as it yielded a simple, interpretable factor structure (see Table 1). Each factor contained items with loadings .40 and higher, as items below this value were discarded. Field (2013) recommends suppressing factor loadings less than 0.3 as loadings greater that 0.4 are considered as more stable.

Table 1

EFA of the 32-item MPBI mother scale

	Items	Factor 1	Factor 2	Factor 3	Factor 4
1.	Praise you.	.705			
2.	Say I love you.	.774			
3.	Hug and kiss you.	.677			
4.	Say thank you to you.	.635			
5.	Motivate you.	.420			
6.	Spend time listening, talking, laughing or playing games with you.	.562			
7.	Comfort you when you are upset or in trouble.	.734			
8.	Ask you about how your day went.	.647			
9.	Help you do something that is important to you.	.569			
10.	Help you to solve a problem or make a decision.	.545			
11.	In a given day, your parents know your whereabouts.		-.745		
12.	Know whom you are with whenever you go out of the house.		-.740		
13.	Know that you have come home at the expected time.		-.733		
14.	Know who your friends are.		-.606		
15.	Control your every activity.		-.474		
16.	Scold you.			.630	
17.	Scream or yell when angry at you.			.758	
18.	Criticize you or your views.			.759	

Table 1 *(Continued)*

	Items	Factor 1	Factor 2	Factor 3	Factor 4
19.	Argue with you about something that he/she does not agree with.			.782	
20.	Threaten to punish you for your wrongdoing without actually doing it.			.597	
21.	Nag you for your wrongdoing.			.581	
22.	Teach you to respect elders.				.638
23.	Remind you that family must come first.				.551
24.	Teach you to be polite to others.				.589
25.	Emphasize that you should not embarrass your family.				.655
26.	Advise you to take care of interaction boundaries with male and female friends.				.585
27.	Teach you based on the teachings of your religion				.818
28.	Instill in you to remember God.				.878
29.	Remind you about rewards and sin.				.865
30.	Remind you to pray to God during good and bad times.				.857
31.	Ensure that you obey religious rules.				.863
32.	Remind you to be thankful and love God in all situations.				.822

The total variance obtained for the four-factor solution of the MPBI Mother scale was 55.2%. Their respective eigenvalues were 30.9 (Factor One), 10.8 (Factor Two), 8.3 (Factor Three) and 5.2 (Factor Four). The factor correlation matrix (see Table 2) between the four factors was found to be low, suggesting that the factors did not measure the same concept. The results revealed that Factor One and Two were correlated at .37, Factor One and Three at -.13, Factor One and Four at .36, Factor Two and Three at -.06, Factor Two and Four at .36 and Factor Three and Four at -.03.

In total, ten items with values from 0.42 to 0.77 loaded on Factor One. As items on this scale represented affection and warmness in maternal behavior, it was named Warmth. The second factor comprised five items that moderately loaded with values from 0.55 to -0.75. This factor was named Monitoring, as the items measured how mothers observed, expressed concern, and monitored adolescent's activities. The third factor was labeled Harsh Discipline, as the items were related to verbal, emotional, and physical punishment. The six items' loading on the third factor ranged in value

Table 2

Component correlation matrix of the MPBI mother and father scales

Component	Mother				Father			
	1	2	3	4	1	2	3	4
1	1.000				1.000			
2	.372	1.000			.477	1.000		
3	-.133	-.058	1.000		-.000	-.094	1.000	
4	.363	.353	-.030	1.000	.446	.453	-.039	1.000

from 0.58 to 0.78. The last factor was named Indigenous Behavior, in which the item loadings ranged from 0.55 to 0.88, centering on cultural and religious issues.

Similar analyses were performed for the MPBI Father scale. The results in Table 2 reveal that factors One and Two were correlated at .48, factors One and Three were correlated at -.00, factors One and Four were correlated at .45, factors Two and Three were correlated at -.09, factors Two and Four were correlated at .45, and factors Three and Four were correlated at -.04.

Based on the initial analysis, one item was removed due to having low communality of less than .30. The remaining items were subjected to another EFA. Inspection on the eigenvalues, scree plot, and PA yielded a four-factor solution for the MPBI Father. The total variance obtained for the four-factor solution was 62.9%. Their eigenvalues were 36.2 (Factor One), 11.4 (Factor Two), 9.9 (Factor Three) and 5.4 (Factor Four). Based on the cut-off point of .30, 10 items loaded on the first factor, five items loaded on the second factor, six items loaded on the third factor, and

11 items loaded on the fourth factor. The factor loadings of the items are presented in Table 3.

To cross-validate the four-factor structure obtained in EFA, the 32-item MPBI Mother scale was subjected to CFA using data from Phase 1. To evaluate the fit of the model, recommended common criteria were used: χ^2, the comparative fit index (CFI) and Goodness of fit index (GFI) > .90, root mean square error of approximation (RMSEA) < .08 (Hu & Bentler, 1999). Figure 1 presents the CFA of the four-factor structure of the MPBI Mother scale.

The results based on the maximum likelihood procedures suggested that this model provided an inadequate fit to the data, χ^2=2388.89, *df* =458, χ^2/ *df* =5.32, *p* < .001; CFI = .87; GFI = .83; RMSEA = .07. Further inspection on the model revealed that by allowing some error terms to covary between the Warmth and Indigenous factors could improve model fit. As the covariance between items 2 and 13 from the Warmth factor was consistent with theory, the path between these items were freed. The model was thus re-examined; however, the fit

Table 3

EFA of the 32-item MPBI Father Scale Confirmatory Factor Analysis

	Items	Factor 1	Factor 2	Factor 3	Factor 4
1.	Praise you.	-.755			
2.	Say I love you.	-.848			
3.	Hug and kiss you.	-.817			
4.	Say thank you to you.	-.747			
5.	Motivate you.	-.541			
6.	Spend time listening, talking, laughing or playing games with you.	-.664			
7.	Comfort you when you are upset or in trouble.	-.764			
8.	Ask you about how your day went.	-.728			
9.	Help you do something that is important to you.	-.612			
10.	Help you to solve a problem or make a decision.	-.656			
11.	In a given day, your parents know your whereabouts.		-.828		
12.	Know whom you are with whenever you go out of the house.		-.864		
13.	Know that you have come home at the expected time.		-.823		
14.	Know who your friends are.		-.725		
15.	Control your every activity.		-.541		
16.	Scold you.			.694	
17.	Scream or yell when angry at you.			.796	
18.	Criticize you or your views.			.766	
19.	Argue with you about something that he/she does not agree with.			.815	
20.	Threaten to punish you for your wrongdoing without actually doing it.			.688	
21.	Nag you for your wrongdoing.			.721	
22.	Teach you to respect elders.				.738
23.	Remind you that family must come first.				.663

Table 3 *(Continued)*

	Items	Facto 1	Factor 2	Factor 3	Factor 4
24.	Teach you to be polite to others.				.765
25.	Emphasize not embarrassing your family.				.741
26.	Advise you to take care of interaction boundaries with male and female friends.				.629
27.	Teach you based on the teachings of your religion				.887
28.	Instill in you to remember God.				.897
29.	Remind you about rewards and sin.				.881
30.	Remind you to pray to God during good and bad times.				.921
31.	Ensure that you obey religious rules.				.902
32.	Remind you to be thankful and love God in all situations.				.849

statistics of the model were still inadequate. Additionally, the modification indices suggested covariance between items 9 and 10 in the Warmth factor. After accounting for this covariance, the re-evaluation of the model was still found to be less desirable. The modification indices were further reviewed, and two pairs of error terms from the Indigenous factor were suggested to covary. Freeing the path between items 29 and 31 of the Indigenous factor, however, still did not reveal a good model fit. Then, the error terms between items 33 and 34 were freed as suggested by the modification indices. An evaluation of the new modified model was performed, and an adequate model fit was revealed. Figure 1 presents the final model with inclusion of these new parameters. The fit of the modified four-

dimensional model significantly improved from the original model ($\Delta\chi^2$=558.23, df=4, p < .01). Overall, the goodness-of-fit of the modified model was χ^2=1830.66, df = 454, χ^2/df =4.17, p <.001; CFI = .90; GFI = .88; RMSEA = .06.

The four-factor structure of the MPBI Father scale obtained from the EFA was tested for its goodness-of-fit to the data. Figure 2 presents the CFA of the four-factor structure of the Father scale. The fit indices revealed that the model was inadequately fit to the data (χ^2=2352.04, df = 458, χ^2/df =5.14, p< .001; CFI = .90; GFI = .83; RMSEA = .07), as the GFI value was less than 0.90. A review of the modification indices revealed that the model fit could have been improved by taking into account covariance between items 29 and
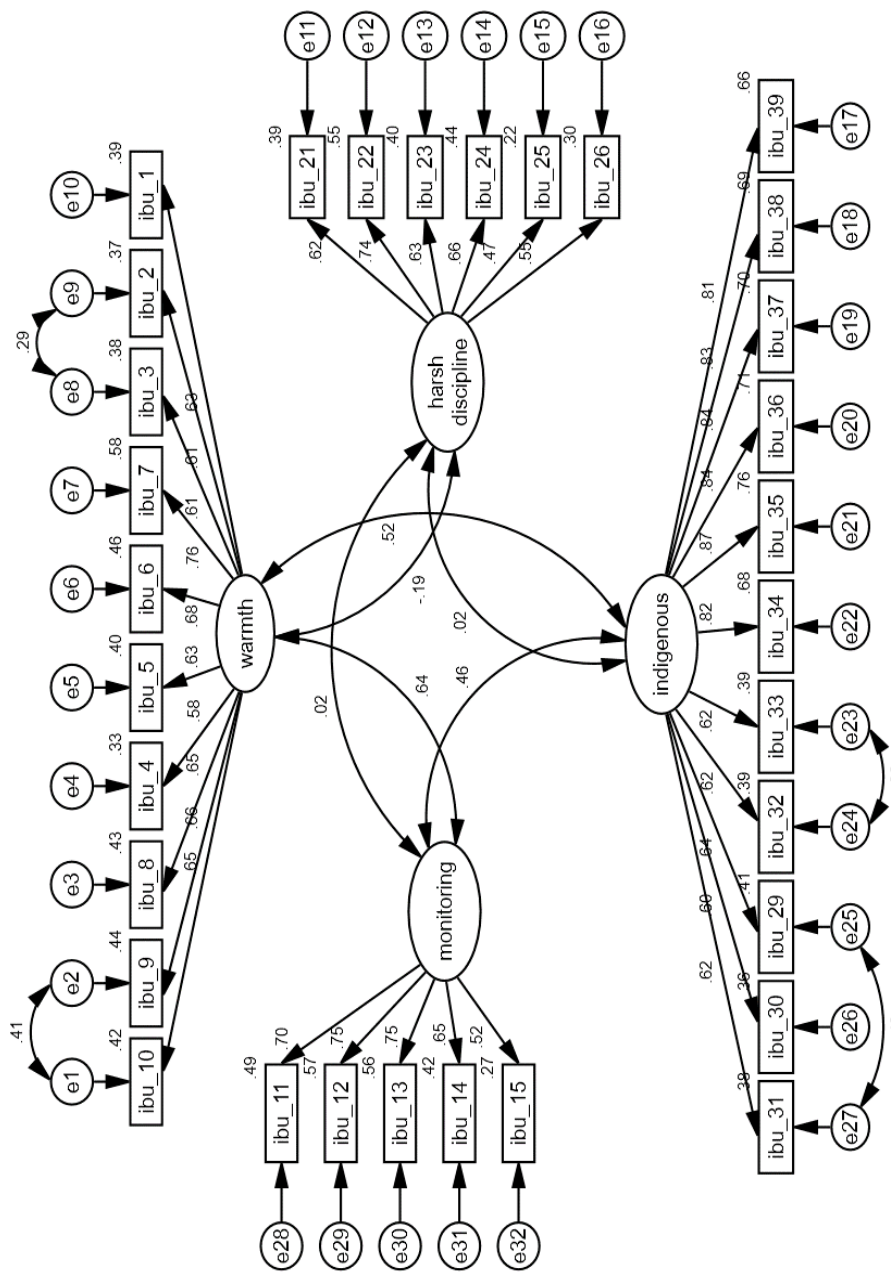
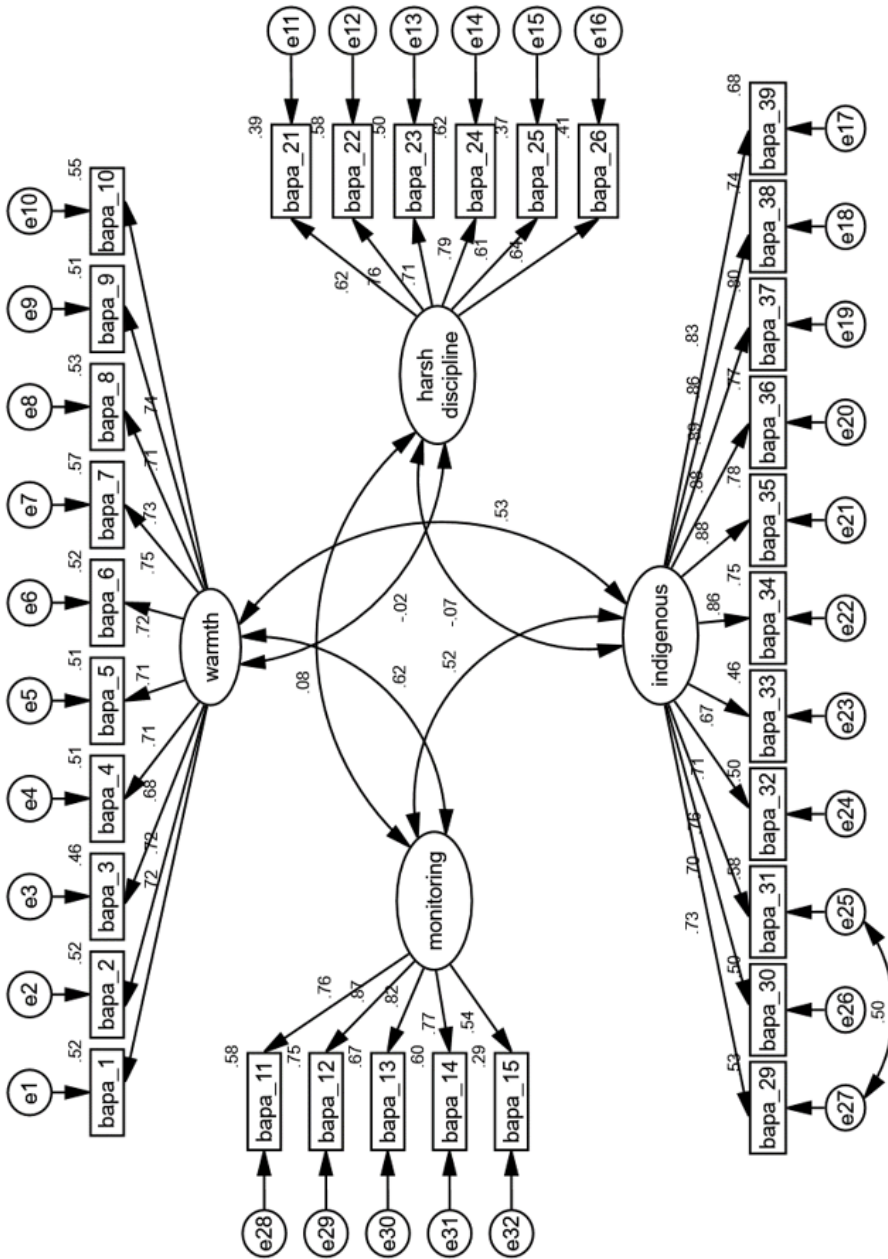*Figure 1.* CFA of the four-factor structure of the MPBI Mother scale

Figure 2. CFA of the four-factor structure of the MPBI Father scale

31 of the Indigenous factor. The model was reassessed, and the fit statistics were found to improve ($\Delta\chi^2$=242.84, df=1, p< .01). The goodness-of-fit for the modified model was χ^2=2109.20, df = 457, χ^2/df =4.62, p <.001; CFI = .91; GFI = .85; RMSEA = .06.

Construction of Scales. The Cronbach's alpha values revealed moderate to high internal consistency for the overall Mother and Father scales. The internal reliability of the Warmth, Monitoring, Harsh Discipline, and Indigenous factors were 0.88, 0.80, 0.78 and 0.93, respectively, for the Mother scale, and 0.92, 0.86, 0.84 and 0.95, respectively, for the Father scale.

Construct Validity. Convergent and discriminant validity are both forms of construct validity. Convergent validity is the extent of different measures of the same construct correlating with one another (i.e., MPBI with PR), while divergent validity is the extent of different constructs diverge or minimally correlate with one another (i.e., MPBI with Overprotection subscale of PBI). To test convergent and divergent validity, the MPBI was investigated in relation to both PR and PBI.

Convergent Validation. Results indicated that the directions and relative magnitude of all correlations were as expected and ranging from small to modest (i.e., .55 between Mother's PR Total Score and Mother's MPBI Warmth; .42 between Father's PR Total Score and Father's MPBI Monitoring). For the MPBI Mother scale, there were moderate positive relationships between the MPBI dimensions and PR Total Score (Warmth=.55, p< .01; Monitoring=.38, p< .01; Indigenous=.51, p< .01; Total MPBI =.65, p< .01), and moderate negative relationship between Harsh discipline dimension and the PR Total Score (-.27, p< .01). As items in the Harsh discipline dimension were negatively worded, it was expected to negatively relate to PR Total Score which were positively worded. Similarly, the results of the MPBI Father dimensions displayed a moderate relationship with Father's PR Total Score (Warmth=.58, p< .01; Monitoring= .42, p< .01; Harsh Discipline= -.30, p< .01; Indigenous=.54, p< .01; Total MPBI=.70, p< .01). Thus, the correlational analysis indicated that the MPBI was appropriately convergent with the PR scale.

Discriminant Validation. The results showed that the correlations between the MPBI Mother scales and the PBI Overprotective subscale were weak (i.e., MPBI Mother: Warmth=-.01, p> .05; Monitoring= .09, p<.01; Harsh discipline=.15, p<.01; Indigenous= .13, p< .01; total MPBI= .04). Similarly, the results of the MPBI Father scales displayed a weak relationship between the father's PBI Overprotective subscale and the MPBI dimensions (Warmth= .04, p< .01; Monitoring= .16, p< .01; Harsh discipline= .22, p< .01; Indigenous= .18, p< .01; total MPBI= .08, p< .05). Overall, the result showed that the MPBI scale had an adequate discriminant validity.

Measurement Invariance. The MPBI was tested across gender (male [n=397] vs. female [n=506]) and age (younger [13-15 years old, n=755] vs. older [16-19 years old, n=148]) of adolescents. Multiple Group CFA (MGCFA) was carried out in three steps to examine the configural (Model 1), metric (Model 2) and scalar invariances (Model 3). In step one, both the MPBI scales were found to have an adequate fit as the data supported the configural validity across sex and age of adolescents (see Table 4).

For step two, differences between the models were examined using χ^2 and CFI value differences as recommended by Cheung and Rensvold (2002), and Meade et al. (2008). Given that $\Delta\chi^2$ test is overly sensitive to large sample size and less

sensitive to lack of invariance compared to ΔCFI, the ΔCFI is used as the primary approach as it is insensitive to sample size and independent of model complexity. Furthermore, it was noted that ΔCFI value of $\leq$.01 would indicate invariance, and if the sample size is greater than 200, differences between groups are inconsequential and analyses could proceed even though the $\Delta\chi^2$ is significant. Based on the analyses, the metric invariance (Model 2) had appropriate fit statistics across the two adolescent groups. Additionally, the ΔCFI value between Model 2 and Model 1 of both the MPBI scales did not exceed 0.01, further supporting metric invariance.

Lastly, examination of the scalar invariance (Model 3) suggested that MPBI

Table 4

Measurement Invariance of the MPBI Mother and Father Scales

	Model	Df	χ^2	$\Delta\chi^2$	RMSEA	CFI	Model Comparison	ΔCFI
	Male vs. Female							
Mother	Full configural invariance	898	2353.13		.042	.901	-	
	Full metric invariance	926	2426.69	73.56	.042	.898	2 vs. 1	.003
	Full scalar invariance	954	2594.11	167.42	.044	.888	3 vs. 2	.001
Father	Full configural invariance	916	2818.51		.048	.901	-	
	Full metric invariance	947	2879.34	60.83	.048	.899	2 vs. 1	.002
	Full scalar invariance	979	3015.54	136.2	.048	.894	3 vs. 2	.005

Table 4 *(Continued)*

	Model	Df	χ^2	$\Delta\chi^2$	RMSEA	CFI	Model Comparison	ΔCFI
	Younger vs. Older							
Mother	Full configural invariance	902	2333.41		.042	.902	-	
	Full metric invariance	930	2422.91	89.5	.042	.898	2 vs. 1	.004
	Full scalar invariance	958	2479.82	56.91	0.42	.896	3 vs. 2	.002
Father	Full configural invariance	916	2770.50		.047	.904	-	
	Full metric invariance	947	2809.34	38.84	.047	.903	2 vs. 1	.001
	Full scalar invariance	979	2855.89	46.55	.046	.902	3 vs. 2	.001

of both scales had acceptable fit indices. The scalar invariance was further supported by the ΔCFI value between Model 3 and Model 2 in both groups. Therefore, the factor structure of the MPBI Mother and Father scales were stable across sex and age of adolescents.

Latent Mean Differences. To determine the difference in latent mean, we assessed the value of the critical ratio (CR; Tsaousis & Kazi, 2013). Using z-statistics, the CR value was calculated to determine whether the coefficient is significantly different from zero. A CR value of ±1.96 indicates significant latent mean difference. A positive CR value suggests that the latent mean differences is higher in the comparison group than the reference group. In contrast, a negative CR implies that the latent mean

differences in the comparison group are smaller than the reference group.

Results of the CR value for the MPBI Mother scale indicated that female adolescents scored higher than males in the Monitoring (CR=2.13) and Indigenous (CR=3.22) factors but scored lower in Harsh Discipline (CR=-5.81). In terms of the Warmth (CR=-1.47), no significant mean differences between males and females were evident. Similarly, the CR value indicated no significant differences between younger and older adolescents in the Warmth (CR=1.84), Harsh Discipline (CR=0.63), or Indigenous (CR=8.44) factors. In contrast, there was a significant difference between younger and older adolescents in Monitoring (CR=2.40).

For the MPBI Father scale, females had higher mean scores than males in the

Indigenous (CR=3.22) and Monitoring (CR=2.13) factors but lower mean scores than males in Harsh Discipline (CR=−5.81). On the other hand, there were no significant differences between female and male adolescents in Warmth (CR=-1.47). When comparing the latent means across age groups, there was no significant differences between younger and older adolescents in Warmth (CR=-.408), Monitoring (CR=1.18), Indigenous (CR= 0.77), or Harsh Discipline (CR=-1.60).

Phase Two

The general aim of the second study was to validate the factor structure of the MPBI that was developed in Study One. To establish generalizability, a scale developed within a particular sample needs to be tested against a different sample (Thompson, 1996). As the MPBI was initially explored and evaluated using adolescents in Phase 1, it is important to validate the results with an independent sample. Furthermore, replication is necessary for psychological research (Cohen, 1994). Thus, Study Two was conducted to replicate the factor structure of the MPBI using an independent sample of adolescents.

Method and Procedure

Participants. A total of 968 adolescents aged 13 to 19 (M=14.25 years, SD=1.00) participated in the study. Slightly more than half (51.1%) of the participants were females. A large proportion (72.5%) of the participants were Malays, followed by Chinese (19.6%), Indian (6.3%) and Others (1.7%).

Procedure. Study Two followed the same procedures as Study One. After obtaining ethical approval from the required agencies, the same questionnaires used in Study One were distributed and completed by participants at selected schools. It contained the 32-item MPBI developed in Study One and other documents such as instructions sheets outlining ethical issues. The reliability of the four-factor MPBI Mother scale was as follows: Warmth α =.87, Monitoring α =.77, Harsh Discipline α =.77, and Indigenous α =.93, while the corresponding values for the Father scale were Warmth α =.93, Monitoring α =.88, Harsh Discipline α =.85, and Indigenous α =.96.

Results and Preliminary Discussion

Demographic Characteristics of Families. Overall, the participants had middle-aged (M_{mother}=43.89, SD=6.06; M_{father}=47.58, SD=6.93) parents with average education. Participants came from families that were moderate in size (M=4.17, SD=1.94). Most of the participants came from intact families (90.1%) and lived with their biological mother and father (87%).

Confirmatory Factor Analyses. CFA were computed to establish whether the factor structure of the 32-item MPBI Mother and Father scales was successfully replicated in the data from Study Two. For the Mother scale, the CFA indicated that the model had an inadequate fit to the data (χ^2=2437.17, df =458, χ^2/ df =5.32, p < .001; CFI = .86; GFI = .84; RMSEA = .07). A review of the modification indices indicated that the model fit could be improved by considering

covariance in some of the error terms in the Warmth and Indigenous factors. The two pairs of error terms in the Warmth factor that were suggested to covary were items 2 and 3 as well as items 9 and 10. In the Indigenous factor, items 29 and 31 and items 33 and 34 were suggested to covary. The fit of the modified model was a significant improvement over the initial model ($\Delta\chi^2$=542.43 df=4, p < .01). The overall goodness-of-fit of the modified model was χ^2=1894.74, df = 454, χ^2/df =4.17, p < .001; CFI = .92; GFI = .88; RMSEA = .06.

In terms of the MPBI Father scale, the CFA revealed that the four-factor structure of the MPBI Father had an adequate fit (χ^2=3157.58, *df* =458, χ^2/ *df* =6.90, p <.001; CFI = .89; GFI = .80; RMSEA = .08). Inspection of the modification indices revealed that allowing covariance between the error terms for several items could improve model fit. Similar to the analysis of the mother scale items, a pair of error terms (items 29 and 31) from the Indigenous factor was suggested to covary. The fit statistics revealed that the resultant model had an adequate fit to the data, with a significant improvement in model fit ($\Delta\chi^2$=360.20, df=2, p < .01). The overall goodness-of-fit for the modified model was χ^2=2797.38, df = 456, χ^2/df =6.14, p <.001; CFI = .90; GFI = .83; RMSEA = .07.

In conclusion, the CFA results of both the MPBI Mother and Father scales supported the proposed four-factor model and replicated the CFA results from Study One.

Discussion

The goal of the present study was to develop a measure that enables Malaysian adolescents to report their perceptions of their parent's parenting behaviors. Many parenting behavior measures exist but have mostly been developed based on normative parenting behaviors observed in Western cultures. As past research has suggested that parents from different cultural groups vary in terms of socialization goals and practices (Hulei et al., 2006) and that not all these practices may be adaptive or appropriate (Keats, 2000) to Asian parents, specifically Malaysian parents, the primary goal of this study was to develop a new parenting behavior measure that was culturally sensitive to the characteristics of the Malaysian population. Overall, the results indicated that the goals of the present study were achieved. The four-factor MPBI was reliable, consistent with existing models of parenting behaviors, and structurally similar for adolescent girls and boys regardless of age. Importantly, the measurement structure of the MPBI was replicated and validated in a different adolescent sample.

The MPBI consisted of a Mother and a Father scale with similar items to allow meaningful comparisons of mothers and fathers parenting behavior. Despite past literature documenting evidence of differences in maternal and paternal parenting behavior, studies have shown that maternal and paternal parenting varies based on the quantity rather than the quality of different behaviors, whereby the core constructs of parenting behavior between a

mother and a father are overall similar and differ mostly in terms of content (Fagan et al., 2014).

Each of the MPBI scale had four underlying factor structures that were supported by CFA. Three of these factors, that is, Warmth, Monitoring, and Harsh Discipline, were named based on classic parenting behavior constructs. Items in the first factor comprised expected warmth items such as saying, "I love you" and showing physical affection. This behavior is like that displayed by Western parents, further emphasizing that warmth is a universal dimension. Similarly, the second factor emerged as having items that portrayed monitoring parenting behavior. It is possible that the monitoring items, such as, controlling of daily activities and knowing the whereabouts of the adolescents, reflect controlling parenting in Western cultures. As defined by earlier research (Hardy et al., 1993), controlling parenting behavior pertains to the amount of control, restrictive attitude, and protectiveness expressed. However, as Asian cultures typically portray restrictiveness and harshness as parental control, the controlling items in the second factor simply reflected the Malaysian equivalent of monitoring.

The third factor of the MPBI comprised items that demonstrated negative discipline. As Asian parenting is more controlling in nature, unsurprisingly, harsh discipline emerged in the study. Harsh discipline has been described as a parental attempt to control a child using verbal violence or physical forms of punishment (Chang et al., 2003). The fourth factor of the MPBI had items related to indigenous parenting expressed via religious (i.e., reminding adolescents to pray to God during good and bad times) and family practices (i.e., teaching adolescents to respect elders). These unique practices are probably less likely to be captured in parenting measures developed in the West. Most Western parenting behavior measures focus on parental care, involvement, overprotection, encouragement of independence and discipline (Skinner et al., 2005). Western studies that measure parental religiosity related behavior often focus on church affiliation and attendance (Bridges & Moore, 2002; Godina, 2014; Wilcock, 2002).

This study is not without limitations. First, the reliability of the information obtained depended solely on one source. Thus, future work may wish to obtain information from other sources of parenting behavior such as parents' themselves to enhance the validity of the data. In terms of reliability and validity, the present study employed convergent and divergent validity. Test-retest analyses are suggested for future researchers to determine the stability of the constructs measured (Reininger et al., 2003). Although the sample size was large, the findings cannot be generalized to other samples, as this study was restricted to adolescents from a non-clinical sample. It would be helpful for future studies to involve participants from a clinical sample to explore the consistency and accuracy of the MPBI across populations. Future research may want to incorporate the MPBI

in parenting intervention programs targeting parenting skills and strategies in either non-clinical or clinical population. Additionally, other research may look further to examine the utility of the MPBI in assessing the influence of parenting behavior on the psychological health and adjustment of adolescents during this important period of development.

CONCLUSION

This study demonstrates the significance of a culturally sensitive parenting behavior measurement developed with non-Western, particularly Asian, parents. Furthermore, the findings from this study may serve as an impetus for the development of other new and culturally sensitive measures that may contribute to a greater understanding of Malaysian parent-adolescent relationships and thereby the development of effective programs, intervention and policies for families in Malaysia.

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