Factor Structure of the Parenting Attitudes and Approaches Survey in a

Nationally Representative Sample of Head Start Parents

By

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Abstract

Parenting has an influential role in early child development and is a common variable of interest in research on child development. The present study examined the factor structure of the Parenting Attitudes and Approaches Survey (PAAS) in a nationally representative sample of 2,685 parents of children attending Head Start. The PAAS is a 13-item questionnaire designed to assess for authoritative and authoritarian parenting, parental warmth, and parental energy. The results of a confirmatory factor analysis determined that the four-factor model provided poor to adequate fit to the data. To better identify the factor structure of the PAAS, an exploratory factor analysis was conducted on a randomly assigned half of the sample (n = 1,359) of parents of youth enrolled in Head Start from the FACES database. Results suggested a two-factor solution using 11 items. Factor 1 reflected warm/responsive parenting with consistent disciplining approaches, while Factor 2 reflected a harsh, inconsistent approach to discipline. The two-factor model was then confirmed in the remaining half of the sample (n = 1,339) and demonstrated an adequate to close fit to the data (χ^2 (41) = 132.253 ($p < .001$), RMSEA = .041 (90% CI = .033-.049), SRMR = .037, and TLI = .880) with improved factor loadings and residual variances compared to the original four-factor model. Results support the notion that warm, responsive parents tend to report the use of consistent discipline, while parents endorsing the use of harsh discipline tend to also report the use of inconsistent discipline strategies. Implications of the results for the assessment of parenting in future research are discussed.

Keywords: Parenting Attitudes and Approaches Survey (PAAS); Family and Child Experiences Survey (FACES); Head Start; confirmatory factor analysis; exploratory factor analysis; parenting measure.

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Factor Structure of the Parenting Attitudes and Approaches Survey in a Nationally Representative

Sample of Head Start Parents

Parenting has long been recognized as an integral factor in early child development. Previous research demonstrate that parenting practices are associated with child cognitive development (e.g., Lugo-Gil & Tamis-LeMonda, 2008), externalizing and internalizing problems (e.g., Caron, Weiss, Harris, & Catron, 2006), school-related socialization (e.g., Taylor, Clayton, & Rowley, 2004), and social competence (e.g., Blandon, Calkins, & Keane, 2010). Despite the strong relation between parenting and child outcomes, little empirical research has addressed how parenting practices are operationalized and assessed.

Over several decades, a large number of instruments have been developed to quantify and classify parenting practices and attitudes into different styles (e.g., authoritative, authoritarian) or dimensions (e.g., warmth, control). In a review of parenting measures, Dix and Gershoff (2001) identified 111 instruments that purport to measure components of parent-child relationships published between 1987 and 1996. Many parenting measures are self-report questionnaires. For example, the modified Child Rearing Practices Report (modified-CRPR; Rickel & Biasatti, 1982) is a 40-item self-report questionnaire designed to assess parents' attitudes, beliefs, and values about child-rearing. Items demonstrating more controlling and punitive attitudes (e.g., "I believe children should not have secrets from their parents") identify a dimension of restrictiveness in child-rearing; whereas, items suggesting attitudes favoring warmth and encouragement of children's independence (e.g., "I make sure my child knows that I appreciate what he tries to accomplish") are thought to reflect a dimension of nurturance in child-rearing. Although items used in available parenting measures appear to capture the constructs intended by the developers at face value, little empirical data have established the validity of these constructs.

To advance a field of study, it is vital that researchers and theorists have a clear and consistent understanding of how to measure the identified constructs of interest. This clarity can be achieved through evaluation and refinement of existing measures. Psychometric data (e.g., reliability and validity estimates)

are necessary for determining an instrument's ability to measure a construct of interest. As it relates to parenting measures, the field lacks instruments that have consistently demonstrated sound psychometric data (Dix & Gershoff, 2001). For instance, factor analyses of Arnold, O'Leary, Wolff, and Acker's (1993) Parenting Scale have demonstrated multiple factor structures (e.g., Prinzie, Onghena, & Hellinckx, 2007; Reitman et al., 2001). Additionally, new parenting measures continue to be developed and used in research with inadequate evidence of their psychometric properties (Dix & Gershoff, 2001). While establishing a measurement model remains foundational to research, the lack of empirically based development is likely a challenge to resolve in most studies because small sample size may restrict the ability of researchers to examine the measurement model of parenting measures prior to use in research.

Recent large scale data collection projects on child development may now make it possible to provide much needed empirical evaluation of parenting measurement tools. For example, from 2006 to 2009, the Head Start program collected data on parenting attitudes and beliefs from over 2,000 parents. Researchers developed a parent-report questionnaire, the Parenting Attitudes and Approaches Survey (PAAS), designed to capture dimensions of parent-child relationships thought to influence various child outcomes important to Head Start's mission (e.g., school readiness and social-emotional development). The purpose of the proposed study is to assess the factor structure of the PAAS.

The FACES Parenting Attitudes and Approaches Survey

The Family and Child Experiences Survey (FACES) is a longitudinal study of Head Start program performance that began in 1997. The purpose of FACES is to examine the developmental progress of children and their families during and following participation in Head Start (West et al., 2010). The 2006 cohort of FACES included a battery of child assessments and direct observations, as well as interviews with parents, teachers, and program managers. A nationally representative sample of 3,315 Head Start children - along with their families, classrooms, and programs - provide a breadth of descriptive information on the population served, staff qualifications, classroom practices, and child and

family outcomes (West et al., 2010). To measure parenting, the FACES 2006 researchers designed a 13-item self-report questionnaire, called the Parenting Attitudes and Approaches Survey (PAAS).

The PAAS was intended to provide data on how parents express and regulate emotions, how parents convey authority and discipline, as well as parents' goals for their children's accomplishments and their values concerning their child's autonomy (West et al., 2010). The FACES 2006 researchers grouped 13 items on a conceptual basis to yield four scale scores: Parental Warmth, Parental Energy, Authoritarian Style, and Authoritative Style. The Parental Warmth Scale aimed to reflect a warm, supportive parenting style in which curiosity is encouraged. The Parental Energy Scale aimed to identify the parent's consistency in enforcing rules. The Authoritative Scale aimed to reflect a less harsh parenting style with greater use of rationales for discipline. Lastly, the Authoritarian Scale aimed to identify a stricter, more directive parenting style (Aikens et al., 2010). Table 1 shows the items for each scale. The PAAS consists mostly of items chosen from the widely-used Child Rearing Practices Report (CRPR; Block, 1965).

Foundation of the PAAS: The Development and Use of the CRPR

The CRPR is a 91-item Q-sort rating system that evaluates parents' child-rearing attitudes, values, behaviors, and goals. The item pool was developed through behavioral observations of mother-child interactions, a thorough review of socialization literature, and discussion with psychologists from the United States and several Scandinavian countries (Block, 1980). However, the CRPR has not been well-validated, does not have standard scales, and does not have items that consistently load onto a particular construct. The CRPR was specifically developed to minimize communal variance among items, and the correlations between items vary considerably across studies (Block, 1980). Although providing conceptually rich data on child-rearing, there are too few related items to successfully develop standard scales from the CRPR. Therefore, constructs derived from the CRPR items can differ substantially across studies.

Table 1

Parenting Attitudes and Approaches Survey: Scales and Items

Scale/Item	Mean (*SD*)	Skewness	Kurtosis
Parental Authoritative	3.445 (1.366)	-0.478	-0.989
1. I control my child by warning about bad things that can happen.	3.824 (1.057)		
2. I teach my child that misbehavior will always be punished.	4.006 (1.068)		
3. I encourage my child to be independent of me.	4.126 (0.940)		
4. I encourage my child to be curious, to explore, and to question things.	1.829 (0.889)		
Parental Warmth	4.263 (0.880)	-1.233	1.500
4. I encourage my child to be curious, to explore, and to question things.	4.171 (0.889)		
5. My child and I have warm intimate moments together.	4.287 (0.812)		
6. I am easygoing and relaxed with my child.	3.958 (0.921)		
7. I make sure my child knows I appreciate accomplishments.	4.559 (0.565)		
8. I believe physical punishment to be the best way of disciplining.	3.341 (1.027)		
Parental Authoritarian	2.191 (1.362)	0.783	-0.657
8. I believe physical punishment to be the best way of disciplining.	1.659 (1.027)		
9. I do not allow my child to get angry with me.	2.940 (1.304)		
10. I believe that a child should be seen and not heard.	1.970 (1.386)		
Parental Energy	3.904 (1.096)	-0.784	-0.015
11. At times, I just don't have the energy to make my child behave.	3.805 (1.213)		
12. I have little or no difficulty sticking with my rules for my child even when close relatives are there.	3.825 (1.115)		
13. Once I decide how to deal with misbehavior, I follow through.	4.079 (0.918)		

Note. Items 4 (Authoritative), 8 (Warmth), 9, and 11 were reverse coded so that 1 = exactly and 5 = not at all, as instructed by FACES 2006 User Guide.

Results from factor analyses of the CRPR Q-sort demonstrate this variability in the number of constructs the measure can produce, even in samples of similar demographics (e.g., white, middle-class mothers). Block (1980) reported that previous factor analyses typically yielded 28 to 33 different

parenting dimensions. Internal consistencies or other psychometric data were not reported for these individual analyses. Later research examining the consistency of parents' child rearing attitudes over time in a sample of mostly Caucasian parents found that the number of factors in the CRPR was narrowed to 21 (plus residual items that did not fall into existing factors). These factors included independence, control, rational guidance, enjoyment of child, expression of affection, and punishment (Roberts, Block, & Block, 1984). These initial analyses demonstrated many, highly-specific scales. For researchers who want to measure broad aspects of parenting (e.g., nurturance, restrictiveness), factor analyses have demonstrated that the CRPR scales are too conceptually narrow to be useful in most studies.

In an effort to create scales of broader aspects of parenting qualities, Rickel and Biasatti (1982) created a shortened CRPR questionnaire by administering the 91 Q-sort items in a survey format to parents from an urban and suburban school district as well as undergraduate students. The factor analysis resulted in a 40-item questionnaire with two factors, Nurturance and Restrictiveness (Cronbach's α = .82 for each scale). The modified-CRPR has demonstrated this two factor structure in studies both in the US and internationally (e.g., Deković, Janssens, & Gerris, 1991; Woolfson & Grant, 2006). For example, Andersson and Sommerfelt (2001) conducted a principal components factor analysis of only 65 CRPR Q-sort items and still found two factors: Nurturance (Cronbach's α = .75) and Restrictiveness (Cronbach's α = .74). In contrast, McNally, Eisenberg, and Harris (1991) examined the consistency and change of middle-income, Caucasian mothers' child rearing attitudes over eight years. They administered the CRPR Q-sort and maximized internal consistencies by refining the clusters of items to form scales. Clusters with low alphas at more than two time points and clusters with alphas of .45 or less were eliminated, resulting in eight factors (mean Cronbach's α range = .46-.83). Results from these studies demonstrate the variability of scale construction using the CRPR Q-sort. Failure to identify items that consistently measure a given construct makes it difficult for the field to gain an understanding of parenting constructs, thus, limiting comparisons across studies.

Because the CRPR Q-sort has historically produced a range of inconsistent, highly specific scales, researchers often select items or factors of interest from the CRPR to design their own parenting measures. The PAAS was created in this way, by selecting items from the CRPR Q-sort on a conceptual basis and then grouping the items to formulate broad constructs that were meaningful for FACES 2006. Although the selection of items or factors are conceptually-driven by the literature, these instruments developed for specific research projects often lack evaluation or psychometric data to determine their utility in measuring parenting constructs. For example, Kochanska, Kuczynski, and Radke-Yarrow (1989) administered the CRPR Q-sort to middle-class, Caucasian mothers of young children to examine whether the mothers' behavior, as assessed by naturalistic observations, was consistent with their attitudes toward child rearing. Researchers selected for analysis only the factors that were previously identified in the literature as components of authoritarian and authoritative parenting. Results of significant correlations between observed maternal control strategies and authoritarian and authoritative styles indicated that the scales were related to observed measures of parenting styles. However, Kochanska et al. did not report psychometric data on the CRPR scales used to measure the constructs of interest.

Recent studies that report psychometric properties of their parenting measures using CRPR items typically report reliability estimates (i.e., Cronbach's alpha), but generally find low to adequate ($< .70$) internal consistency. For instance, Lindhout, Markus, Hoogendijk, and Boer (2009) selected the items identified by Rickel and Biasatti (1982) as components of nurturance and restrictiveness. However, they also included additional items from the CRPR Q-sort that yielded low to moderate internal consistency: negative affect toward child (Cronbach's $\alpha = 0.61$), worry about the child (Cronbach's $\alpha = 0.59$), and encouraging independence (Cronbach's $\alpha = 0.69$). Similarly, Ceballo and Hurd (2008) assessed parenting practices in a sample of Latina, African American, and European American mothers. They constructed a parental warmth scale (Cronbach's $\alpha = .66$) and a psychological control scale (Cronbach's $\alpha = .76$) by selecting items from the modified-CRPR (Rickel & Biasatti, 1982). The results from these studies demonstrate the limited evaluation of instruments using CRPR items designed specifically for a particular

study. Although items appear to be useful to researchers, without rigorous tests of the psychometric properties of the measures created from the CRPR, the contribution of the findings based on these study-specific measures is unclear. In addition to evaluating the empirical basis of parenting measures, it is also important to affirm that the factor structures are consistent with theories on parenting.

The PAAS Scales: Theoretical Underpinnings

The field of psychology has made many advances in identifying and understanding the practices, attitudes, and beliefs that are core components of parenting. Parenting styles tend to represent patterns of child-rearing that are defined by high or low levels of parenting dimensions, namely warmth, control, and responsiveness (Coolahan, McWayne, Fantuzzo, & Grim, 2002). The most widely used model of parenting styles was proposed by Baumrind (1966), who identified three typologies. Authoritative parenting is characterized by high levels of parental nurturance or warmth, involvement, sensitivity, reasoning, control, and encouragement of autonomy. Authoritarian parenting consists of high levels of restrictive, punitive, rejecting, and assertive parenting attitudes and practices. Lastly, permissive parenting style is characterized by high levels of parental warmth and acceptance but low levels of involvement and control. In an effort to represent and add to Baumrind's three typologies, Maccoby and Martin (1983) identified two parenting dimensions (i.e., acceptance/responsiveness and demandingness/control), as well as identified a fourth parenting style (i.e., uninvolved) which is characterized by low responsiveness and low control. These parenting styles have been used extensively to investigate parenting practices; however, there is some debate about whether traditional parenting styles are an appropriate assessment of parent-child relationships.

Some research demonstrates that previously, theoretically derived parenting styles are not representative of parenting practices and attitudes in some populations. Baumrind (1966) and others have been criticized for defining parenting styles in mostly Caucasian, middle-income samples (McWayne, Owsianik, Green, & Fantuzzo, 2008). Therefore, such parenting styles may not be generalizable to other populations. For example, African American parents of low socioeconomic status have demonstrated

parenting styles that incorporate both authoritative and authoritarian parenting, and these styles of parenting were found to promote adaptive child development (Brody & Flor, 1998; Middlemiss, 2003). Additionally, in a study of African American mother-child dyads, Weis (2002) found support for three clusters similar to traditional typologies but also found support for an affectionate-distressed style (i.e., high control and moderate warmth and frustration). Lastly, McWayne et al. (2008) questioned the validity of parenting constructs for low-income, African American parents after their results failed to demonstrate significant relations between the traditional constructs of parenting and African American preschool children's social, emotional, and behavioral skills. These studies suggest that traditional definitions of parenting styles may not always capture characteristics of parenting that actually exist in data. To advance the field of study, researchers and theorists must have a clear and consistent understanding of the constructs that are thought to be important to parent-child relationships.

Limitations to Previous Research

Although previous research has provided significant gains in the development of parenting assessment, the results thus far are inconsistent with regard to which aspects of parenting are important and how they are best measured. Lack of clear understanding of the important parenting constructs creates challenges for researchers in the field to make meaningful and consistent conclusions about parent-child relationships. To advance the field, research is needed that provides assessment of the tools purported to measure commonly hypothesized elements of parenting.

From an empirical basis, the PAAS was formed by the selection of items from the CRPR and by the inclusion of three additional items. Previous factor analyses of the CRPR Q-sort demonstrate a range of possible factor structures and low to moderate internal consistency of scales (Lindhout et al., 2009; Rickel & Biasatti, 1982; Roberts et al., 1984). Without reliable and well-validated scales, individual studies, like FACES 2006, often select items from the CRPR on a conceptual basis to develop their own constructs that are meaningful for their particular studies. However, the PAAS has not been evaluated to

confirm its factor structure, as defined by FACES 2006, therefore demonstrating a need to examine the newly designed PAAS to identify its utility in measuring parenting constructs.

The theoretical basis of a parenting instrument is also important to consider. Baumrind (1966) and Maccoby and Martin (1983) identified the traditional parenting styles that are frequently used in research and theory about parent-child relationships. These are authoritarian, authoritative, permissive, and uninvolved parenting. Over decades of research, various dimensions of parenting have been identified that define these traditional typologies, namely involving differing levels of warmth and control. However, several investigations in low-income, minority populations suggest that parents can incorporate multiple styles of parenting (e.g., Brody & Flor, 1998; Weis, 2002). It is not always clear how parenting constructs should be measured and defined. Nevertheless, there are many parenting instruments, including the PAAS, which are designed and evaluated based on the existing theories of parenting.

The factor structure of the PAAS, proposed by FACES 2006, has a unique structure that raises questions about its theoretical basis. First, the PAAS yields two style-constructs (Authoritative and Authoritarian) and two dimension-constructs (Warmth and Energy). Typically, assessment tools identify just styles, just dimensions, or a hierarchal combination in differing levels of certain dimensions yielding scores on a particular style. Second, the items that constitute the PAAS's Energy scale (e.g., "Once I decide how to deal with misbehavior, I follow through") may actually tap into a dimension better defined as parental control or consistency in disciplining. Third, previous research and theory suggests that differing levels of warmth and control produce authoritative and authoritarian styles (e.g., Baumrind, 1966; Kochanska et al., 1989). This consideration may suggest that a two-factor solution for the PAAS items may exist.

Purpose of Present Study

The purpose of the present study was to examine the factor structure of the PAAS to determine whether the four-factor model proposed by the FACES 2006 researchers is supported by data. Considering the difficulties of establishing consistent factor structures of other parenting measures, it was

hypothesized that the PAAS would benefit from modifications to provide a model with unidimensional scales and relations between indicators and factors that are consistent with the field's understanding of parent-child relationships. To test the study hypothesis, a confirmatory factor analysis (CFA) of the PAAS was completed. Following evaluation of CFA results, exploratory factor analysis (EFA) was conducted to find the most parsimonious, theoretically-sound model that represents the relations among observed data.

Methods

The present study was a secondary data analysis of the Head Start Family and Child Experiences Survey (FACES) 2006. FACES 2006 was designed and conducted by Mathematica Policy Research, Inc. and its partners, funded by the Administration for Children and Families. The Inter-university Consortium for Political and Social Research at the University of Michigan, which operates the Child Care and Early Education Research Connections project in partnership with the National Center for Children in Poverty at Columbia University, granted access to the data. Institutional Review Board approval was provided by the Human Subjects Committee at the University of Kansas.

Participants

Participants were 2,685 parents of children ages 3 to 5 years ($M = 3.76$ years, $SD = .55$) who were enrolled in Head Start for the first time in fall 2006. Eighty-nine percent of responders were the biological, adopted, or step mothers; 6.5% were the biological, adopted, or step fathers; 3.4% were grandparents or great grandparents; and 1.2% were other types of caregivers. On average, mothers were 28.82 years of age ($SD = 6.00$), and fathers were 31.94 years of age ($SD = 7.38$).

The sample was ethnically diverse and largely of low-socioeconomic status. Mothers were 36.6% Hispanic/Latina, 32.3% African American (non-Hispanic), 24.4% White (non-Hispanic), and 6.9% American Indian/Alaska Native, Asian/Pacific Islander, multi-racial/biracial (non-Hispanic), or another race. Fathers were 36.2% Hispanic/Latina, 35.8% African American (non-Hispanic), 22.1% White (non-Hispanic), and 5.9% American Indian/Alaska Native, Asian/Pacific Islander, multi-racial/biracial (non-

Hispanic), or another race. Sixty-nine percent of households had an income of $25,000 or less, and 60.7% of families had poverty status (100% below the poverty threshold). Approximately 34.6% of mothers and 22.0% of fathers had less than a high school diploma. Additionally, 32.8% of mothers and 34.6% of fathers reported having full time employment. It should be noted that more than half of the employment status data on fathers was missing.

Measures

The Parenting Attitudes and Approaches Survey (PAAS) was administered to parents to assess parenting practices, attitudes, and beliefs. The measure consists of 13 items, mostly chosen from the CRPR (Block, 1965). Four constructs were created from the chosen items: Warmth, Energy, Authoritative, and Authoritarian (Aikens et al., 2010). Parents rated the extent to which a series of statements described their attitudes and approaches toward parenting preschool children on a Likert scale (1 = "not at all" to 5 = "exactly"). According to the proposed FACES 2006 model, four items were reverse coded so that a lower score on that item indicated a higher scale score. Those items are "I encourage my child to be curious, to explore, and to question things" (Authoritative), "At times I just don't have the energy to make my child behave" (Parental Energy), "I do not allow my child to get angry with me" (Authoritarian), and "I believe physical punishment to be the best way of disciplining" (Parental Warmth). Table 1 shows the means, standard deviations, and indices of normality for the PAAS scales and items.

Procedures

A nationally representative sample of Head Start children and families was obtained through multilevel probability sampling. First, FACES 2006 researchers used probability-proportional-to-size (PPS) sampling to select 60 Head Start programs, two centers per program, and up to three classrooms per center, for a total of about 415 classrooms (West et al., 2010). Programs were excluded if they were migrant and seasonal worker programs, American Indian and Alaskan Native programs, programs in Puerto Rico and other U.S. territories, or programs not directly providing services to 3-, 4-, and 5-year-old

children (e.g., Early Head Start). Then, sampling with equal probability within each classroom resulted in obtaining about 10 children with parental consent per classroom. Eligible children were those who were new to Head Start in fall 2006 and were one to two years from Kindergarten. This strategy yielded a total of 3,315 eligible and consented children across all programs in fall 2006 (West et al., 2010).

For FACES 2006, newly-entering children were grouped into a 3-year-old or 4-year-old cohort and followed until their kindergarten year. For the 3-year old cohort, data were collected at four time points: fall 2006 and spring 2007 of their first year in Head Start, spring 2008 of their second year, and spring 2009 of their kindergarten year. Data were collected at three time points for the 4-year old cohort: fall 2006 and spring 2007 of their first year in Head Start and spring 2008 of their kindergarten year.

Parent interviews occurred at each time point; however, the PAAS was administered in spring 2007 and spring 2008. The PAAS data from spring 2007 was used for the present study. Parent, child, and family demographic information was gathered at either time point of the child's first year, fall 2006 and spring 2007. Parent interviews were conducted using computer-assisted interviewing techniques (CATI) at the Head Start school or at alternative locations, such as participants' homes.

Results

Preliminary Analysis

To maintain representation of the Head Start population, FACES 2006 researchers created several cross-sectional and longitudinal sampling weights. The sampling weights were created to account for variations in the probabilities of selection (program, center, classroom, and child levels), as well as eligibility and cooperation rates among those selected (West et al., 2010). The formulas for computing the sampling weights are available in the FACES 2006 User Manual, outlined by Mathematica Policy Research (West et al., 2010). As recommended by West et al., the present study utilized a cross-sectional sampling weight to analyze data from parents who completed fall and spring interviews of their children's first year in Head Start. Non-weighted statistics (e.g., means, standard deviations, fit statistics) were also reviewed and did not differ greatly from those using the sampling weight. Therefore, to maintain

representation with the Head Start population, the present analysis included the recommended sampling weight.

Prior to analyses, the normality and missingness of data were examined. Normality of the indicators was examined in SPSS 20.0. Mean absolute skewness of indicators was .917 (range = .058-1.564) and mean absolute kurtosis of indicators was .810 (range = .045-2.589). Skewness and kurtosis of the four factors indicated that the data were normally distributed. Full information maximum likelihood (FIML) was used to account for missing data in parameter estimation. A very small amount of data was missing overall (.447%). These data were missing due to participants choosing "Don't Know" (.433%) or refusing to answer (.014%), both of which were types of item non-responses (West et al., 2010).

Model Test 1: Confirmatory Factor Analysis of Four-factor PAAS

To assess the hypothesized factor structure of the PAAS, confirmatory factor analysis (CFA) was conducted based on the four-factor measurement model put forth by the FACES 2006 researchers. Items one through four loaded onto the latent factor of Authoritative Style; items four through eight loaded onto the latent factor of Warmth; items eight through ten loaded onto the latent factor of Authoritarian Style; and items eleven through thirteen loaded onto the latent factor of Energy. The measurement model contained two dual-loaded indicators (items four and eight). The fixed factor method of scale identification was used in which the latent variances for each factor were set to one. This allowed the factor loadings, residual variances, and latent covariances to be freely estimated. Fixing the latent variances to one also allowed the relations between latent factors to be interpreted as correlations. The latent factors were permitted to be correlated so that results could indicate whether the factors were related. The original model was overidentified with 57 degrees of freedom (*df*), thus allowing for the estimation of parameters. All sample data was analyzed using Mplus 6.11. Because data involved sampling weights, robust maximum likelihood (MLR) estimation was used to identify parameters that were most likely to fit the observed data. The sample correlation matrix is provided in Table 2.

Table 2

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000												
2	0.240	1.000											
3	0.118	0.224	1.000										
4	0.195	0.298	0.296	1.000									
5	0.205	0.240	0.227	0.293	1.000								
6	0.183	0.090	0.167	0.237	0.190	1.000							
7	0.194	0.260	0.288	0.345	0.310	0.268	1.000						
8	0.026	0.117	0.043	-0.035	0.001	-0.042	-0.017	1.000					
9	0.131	0.180	0.119	0.129	0.076	0.106	0.106	0.157	1.000				
10	0.070	0.015	0.045	-0.017	0.004	0.149	0.026	0.283	0.196	1.000			
11	0.160	0.039	0.023	0.023	0.032	-0.040	-0.015	0.099	0.060	0.189	1.000		
12	0.094	0.225	0.225	0.216	0.108	0.166	0.263	0.056	0.128	0.074	-0.045	1.000	
13	0.151	0.306	0.320	0.272	0.190	0.173	0.283	0.070	0.184	0.049	-0.070	0.342	1.000

Note. 1 = Warn kids about bad things; 2 = Teach that misbehavior will always be punished; 3 = Encourage child to be independent; 4 = Encourage child to be curious; 5 = Have warm intimate moments with child; 6 = Am easygoing/relaxed with child; 7 = Make sure child knows I appreciate accomplishments; 8 = Physical punishment is best; 9 = Don't allow child to get angry with me; 10 = Believe child should be seen not heard; 11 = No energy to make child behave; 12 = No difficulty sticking with rules; 13 = Follow through on dealing with misbehavior.

The goal of CFA is to identify a parsimonious, substantively meaningful model that fits observed data adequately well (MacCallum & Austin, 2000). The acceptability of the model was evaluated on the basis of a) overall goodness-of-fit, b) localized areas of ill fit (e.g., modification indices, standardized residuals, EPC values), and c) the interpretability, size and statistical significance of parameter estimates. First, goodness-of-fit statistics provided a global, descriptive indication of the ability of the model to reproduce the observed relations among the indicators in the sample data (Brown, 2006). Overall goodness-of-fit was determined by considering fit indices from multiple categories. According to Hu and Bentler's (1999) guidelines, acceptable model fit was defined by the following criteria: non-significant χ^2

($p > .05$), RMSEA ($\leq .06$, 90% CI $\leq .06$), SRMR ($\leq .08$), and TLI ($\geq .95$). Goodness-of-fit indices for the present study demonstrated that the model proposed by FACES 2006 researchers ranged from a poor to close fit to the data: $\chi^2(57) = 381.692$ ($p < .001$), RMSEA = .046 (90% CI = .042-.051), SRMR = .045, and TLI = .810. A limitation of goodness-of-fit statistics is that they do not provide information on the sources of poor model fit (Brown, 2006); therefore, additional criteria were examined.

Inspection of modification indices identified several areas of localized ill fit. Modification indices approximate how much the model χ^2 would decrease if the suggested parameter was freely estimated. Given the large sample size, the size and direction of expected parameter change (EPC) values were also considered to indicate how much positive or negative change in the parameter would be expected (Brown, 2006). There were 21 modification indices provided (range = 10.712-58.210; completely standardized EPC range = 0.093-17.674), showing a large number of areas of misfit which suggests that the model, overall, does not fit the data well.

Lastly, examination of parameter estimates suggested that the factor structure proposed by FACES 2006 may not be the most theoretically-sound model to fit the data. Unstandardized and completely standardized parameter estimates were evaluated for direction, magnitude, and statistical significance. (Completely standardized parameter estimates from this solution are presented in Figure 1.) Two unstandardized parameter estimates were non-significant: item 4 ("I encourage my child to be curious, to explore, and to question things") to Authoritative ($\lambda = -.066$, $p = .666$) and item 11 ("At times, I just don't have the energy to make my child behave") to Energy ($\lambda = -.009$, $p = .839$). Completely standardized factor loading estimates revealed that the indicators were weakly to moderately related to their purported constructs (range $\lambda = -.007-.669$; $R^2 = .000-.371$). For instance, the latent factor Authoritative accounted for only 11.2% of the variance in item 1 ("I control my child by warning about bad things that can happen"). Furthermore, completely standardized residual variances were high (range = .552-1.00) indicating that the greatest parts of the indicators were not explained by the latent variables. Finally, estimates from this solution identified very high correlations between Authoritative and Warmth
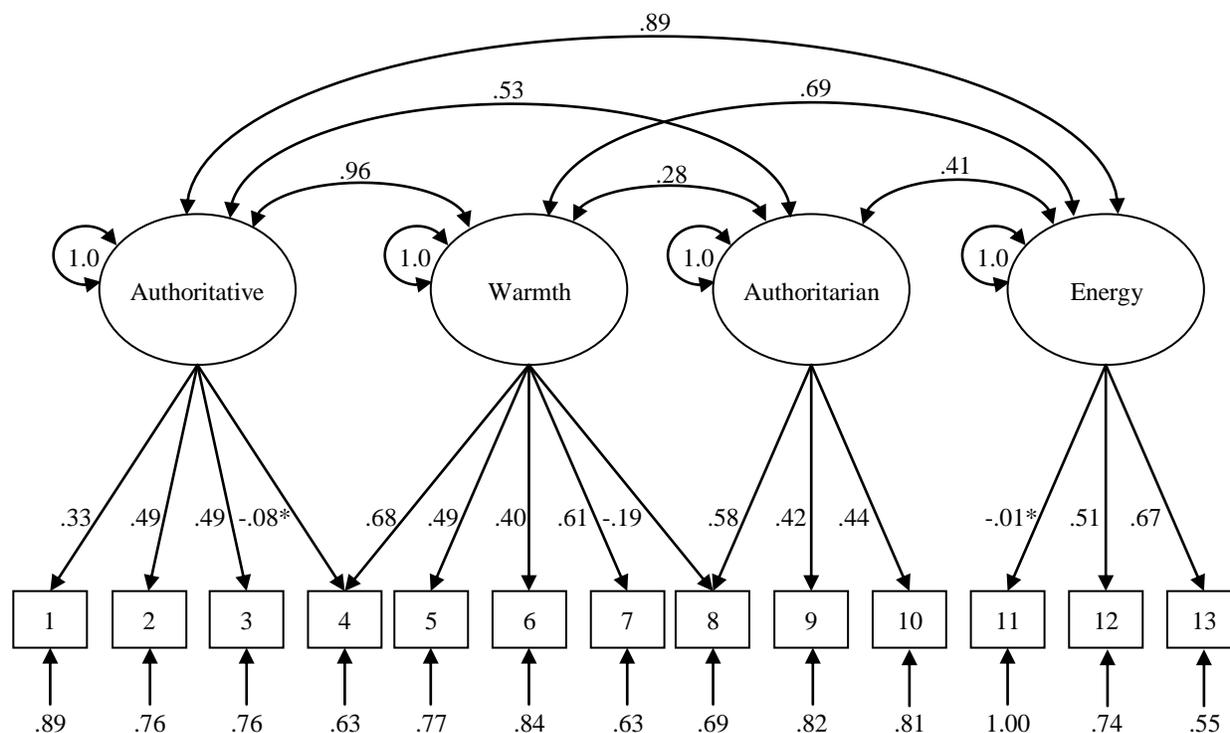
Figure 1. Measurement model of the four-factor PAAS with completely standardized estimates. 1 = Warn kids about bad things; 2 = Teach that misbehavior will always be punished; 3 = Encourage child to be independent; 4 = Encourage child to be curious; 5 = Have warm intimate moments with child; 6 = Am easygoing/relaxed with child; 7 = Make sure child knows I appreciate accomplishments; 8 = Physical punishment is best; 9 = Don't allow child to get angry with me; 10 = Believe child should be seen not heard; 11 = No energy to make child behave; 12 = No difficulty sticking with rules; 13 = Follow through on dealing with misbehavior.
*p > .05.

(.962), as well as Authoritative and Energy (.890). This provided evidence to question whether the latent factors represent distinct constructs or whether an alternative model could better explain the data. Table 3 shows the unstandardized and completely standardized factor loadings, residuals, and R^2 values for the four-factor model. Due to the statistical and theoretical weaknesses in the four-factor model proposed by FACES 2006, an exploratory evaluation of the factor structure present in the observed data was warranted.

Table 3

Loading and Standard Errors, Residuals, and R^2 Values for Each Indicator of the Four-factor PAAS

Factor	Indicator	Unstandardized Loading (*SE*)	Completely Standardized Loading (*SE*)	Residual	R^2
Authoritative	1	.351 (.032)	.334 (.029)	.888	.112
	2	.524 (.035)	.486 (.031)	.764	.236
	3	.459 (.025)	.486 (.027)	.764	.236
	4	-.066 (.153)*	-.075 (.174)*	.633	.367
Warmth	4	.595 (.156)	.678 (.178)	.633	.367
	5	.402 (.022)	.485 (.027)	.765	.235
	6	.363 (.026)	.395 (.027)	.844	.156
	7	.338 (.014)	.609 (.023)	.629	.371
	8	-.195 (.053)	-.188 (.051)	.690	.310
Authoritarian	8	.599 (.064)	.579 (.058)	.690	.310
	9	.542 (.059)	.420 (.045)	.824	.176
	10	.605 (.063)	.435 (.044)	.811	.189
Energy	11	-.009 (.042)*	-.007 (.035)*	1.000	.000*
	12	.567 (.031)	.512 (.028)	.738	.262
	13	.691 (.031)	.669 (.031)	.552	.448

Note. 1 = Warn kids about bad things; 2 = Teach that misbehavior will always be punished; 3 = Encourage child to be independent; 4 = Encourage child to be curious; 5 = Have warm intimate moments with child; 6 = Am easygoing/relaxed with child; 7 = Make sure child knows I appreciate accomplishments; 8 = Physical punishment is best; 9 = Don't allow child to get angry with me; 10 = Believe child should be seen not heard; 11 = No energy to make child behave; 12 = No difficulty sticking with rules; 13 = Follow through on dealing with misbehavior.
*$p > .05$.

Model Test 2: Exploratory Factor Analysis

To produce a more parsimonious and conceptually-sound understanding of the PAAS's items and

constructs, an exploratory factor analysis (EFA) was conducted in a random half of the data ($n = 1,351$),

as generated in SPSS 20.0. The goal of EFA is to determine the number and nature of common factors

needed to account for the pattern of correlations in the observed data (Fabrigar, Wegener, MacCallum, &

Strahan, 1999). Similar to the CFA, data were analyzed in Mplus 6.11 and robust maximum likelihood

(MLR) was used due to sampling weights. Given the high correlations between factors in the original

PAAS model, the oblique rotation procedure was used to allow factors to be correlated and to reveal independent factors if they exist (Kashy, Donnellan, Ackerman, & Russell, 2009).

The maximum likelihood method of factor extraction was used, allowing for the comparison of models with a range of factors to determine the most parsimonious, theoretically interpretable model that adequately accounts for the relations among variables (Fabrigar et al., 1999). The present analysis evaluated models with one to five factors. The selected solution or model was determined based on a) goodness-of-fit indices (i.e., non-significant χ^2 ($p > .05$), RMSEA $\leq .06$ [90% CI $\leq .06$], SRMR $\leq .08$, and TLI $\geq .95$), b) the strength and direction of coefficients ($> .30$), and c) the best simple structure. Simple structure refers to a solution in which each factor is defined by a set of variables that have large loadings onto that one factor, relative to the other variables and relative to their loadings on other common factors (Kashy et al., 2009).

Based on the above criteria, a two-factor solution was identified as the better fitting, theoretically-consistent model. Although goodness-of-fit indices of the two-factor solution, similar to the four-factor solution, demonstrated a poor to close fit to the data (χ^2 (53) = 178.304 ($p < .001$), RMSEA = .042 (90% CI = .035-.049), SRMR = .036, and TLI = .834), evaluation of the strength and direction of the coefficients suggest that the two-factor solution more adequately accounts for relations between variables. Results from the EFA demonstrated moderate relations between factors and variables (loadings range = .323-.606) and smaller standard errors of loadings (range = .033-.130). From examination of the clusters of items, Factor 1 (Responsive-Consistent) seems to reflect warm, responsive, supportive parenting with consistent discipline, while Factor 2 (Harsh-Inconsistent) seems to represent a harsh and inconsistent disciplining style. Lastly, in comparison to solutions with more factors, the two-factor solution demonstrated the best simple structure. For instance, with the three-factor solution, only two variables had loadings greater than .30 onto Factor 3, but those variables also had higher coefficients on another factor. Factor loadings comparing two-factor and three-factor solutions are provided in Table 4.

Table 4

Geomin Rotated Loadings for Two-factor Solution of the PAAS

	2-factor Solution		3-factor Solution		
Item	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3
1. I teach my child that misbehavior will always be punished.	**.516**	.042	.518	.030	.111
2. I encourage my child to be independent of me.	**.523**	.003	.522	-.011	.142
3. I encourage my child to be curious, to explore, and to question things.	**.606**	-.090	.615	-.134	-.010
4. My child and I have warm intimate moments together.	**.461**	.015	.483	-.030	-.127
5. I am easygoing and relaxed with my child.	**.338**	.041	.349	-.004	-.010
6. I make sure my child knows I appreciate accomplishments.	**.574**	-.073	.582	-.121	.000
7. I have little or no difficulty sticking with my rules for my child even when close relatives are there.	**.408**	.004	.406	.009	.288
8. Once I decide how to deal with misbehavior, I follow through.	**.526**	-.003	.537	.004	.345
9. I believe physical punishment to be the best way of disciplining.	-.033	**.458**	-.039	.491	.031
10. I believe that a child should be seen and not heard.	.023	**.529**	.029	.503	-.035
11. At times, I just don't have the energy to make my child behave.	-.014	**.323**	.000	.328	-.345
I do not allow my child to get angry with me.[a]	.187	.228	.189	.223	.014
I control my child by warning about bad things that can happen.[a]	.318	.175	.350	.143	.282

Note. [a]Items were dropped from the final two-factor solution.

Two items from the original PASS did not demonstrate simple structure in the two-factor solution; item 1 ("I control my child by warning about bad things that can happen") and item 9 ("I do not allow my child to get angry with me") had low loadings onto both factors, suggesting that these variables do not correspond to the assumptions of the two common factors. Because higher-factor solutions were inadequate in providing a parsimonious, theoretically-sound understanding of the data, these items were removed from the two-factor solution.

Model Test 3: Confirmatory Factor Analysis of the Two-factor PAAS

To confirm the factor structure of the two-factor solution, CFA was conducted based on the structure obtained from the EFA of the PAAS in the other random half of the sample ($n = 1,339$). The fixed factor method of scale identification was used in which the latent variances for each factor were set to one. The two-factor model was overidentified with 41 *df*. Data was analyzed in Mplus 6.11 and MLR was used due to sampling weights.

Because the original four-factor model and new two-factor model were not nested, it was not possible to determine fit differences using a chi-square difference test. However, comparison of fit indices and parameter estimates provided guidance on whether the two-factor solution was an improvement. First, goodness-of-fit indices demonstrated that the final two-factor model ranged from a mediocre to close fit to the data: $\chi^2(41) = 132.253$ ($p < .001$), RMSEA $= .041$ (90% CI $= .033$-$.049$), SRMR $= .037$, and TLI $= .880$. Compared to the original PAAS model fit indices, there was some improvement in each fit indices. Table 5 shows the fit statistics comparing the models.

Second, the two-factor solution yielded fewer modification indices (6 statements; range $= 12.628$-24.964) and lower EPC values (range $= .121$-$.195$). This finding was an improvement from the original PAAS structure, suggesting that there were fewer localized areas of ill fit. Two modifications were made, correlating residuals between item 8 ("Once I decide how to deal with misbehavior, I follow through") and item 11 ("At times, I just don't have the energy to make my child behave") and between item 8 and item 7 ("I have little or no difficulty sticking with my rules for my child even when close relatives are there"). The scaled chi-square difference test for MLR indicated that the modified model was an improvement ($\Delta\chi^2 = 32.945$, $p < .001$). Completely standardized factor loading estimates revealed that the indicators were moderately related to their purported constructs (range $\lambda = .296$-$.813$; $R^2 = .087$-$.661$). Completely standardized residual variances were still high, although somewhat improved from the original PAAS model (range $= .339$-$.913$). Table 6 shows the factor loadings, residuals, and R^2 values of the final two-factor model. Finally, the correlation between Factor 1 and Factor 2 was low ($r = .091$) and

Table 5

Fit Indices for the Four-factor Model and Two-factor Model of the PAAS

Model	χ^2	df	p	RMSEA	RMSEA 90% CI	SRMR	TLI
4-Factor	381.692	57	< .0001	.046	.042-.051	.045	.810
2-Factor	132.253	41	< .0001	.041	.033-.049	.037	.880

Table 6

Loading and Standard Errors, Residuals, and R^2 Values for Each Indicator of the Two-factor PAAS

Factor	Indicator	Unstandardized Loading (SE)	Completely Standardized Loading (SE)	Residual	R^2
Responsive-Consistent	1	.549 (.040)	.503 (.038)	.747	.253
	2	.449 (.033)	.494 (.038)	.756	.244
	3	.483 (.026	.571 (.033)	.674	.326
	4	.401 (.029)	.484 (.033)	.766	.234
	5	.340 (.035)	.371 (.037)	.863	.137
	6	.323 (.018)	.595 (.030)	.646	.354
	7	.447 (.041)	.404 (.037)	.837	.163
	8	.487 (.031)	.542 (.036)	.706	.294
Harsh-Inconsistent	9	.408 (.071)	.395 (.065)	.844	.156
	10	1.118 (.138)	.813 (.100)	.339	.661
	11	.361 (.059)	.296 (.048)	.913	.087

Note. 1 = Teach that misbehavior will always be punished; 2 = Encourage child to be independent; 3 = Encourage child to be curious; 4 = Have warm intimate moments with child; 5 = Am easygoing/relaxed with child; 6 = Make sure child knows I appreciate accomplishments; 7 = No difficulty sticking with rules; 8 = Follow through on dealing with misbehavior; 9 = Physical punishment is best; 10 = Believe child should be seen not heard; 11 = No energy to make child behave.

non-significant suggesting that the factors are unrelated. The measurement model of the two-factor model with completely standardized parameter estimates is provided in Figure 2. Overall, the two-factor solution of the PAAS appears to be a more parsimonious, theoretically interpretable model compared to the original conceptualization of the measure.
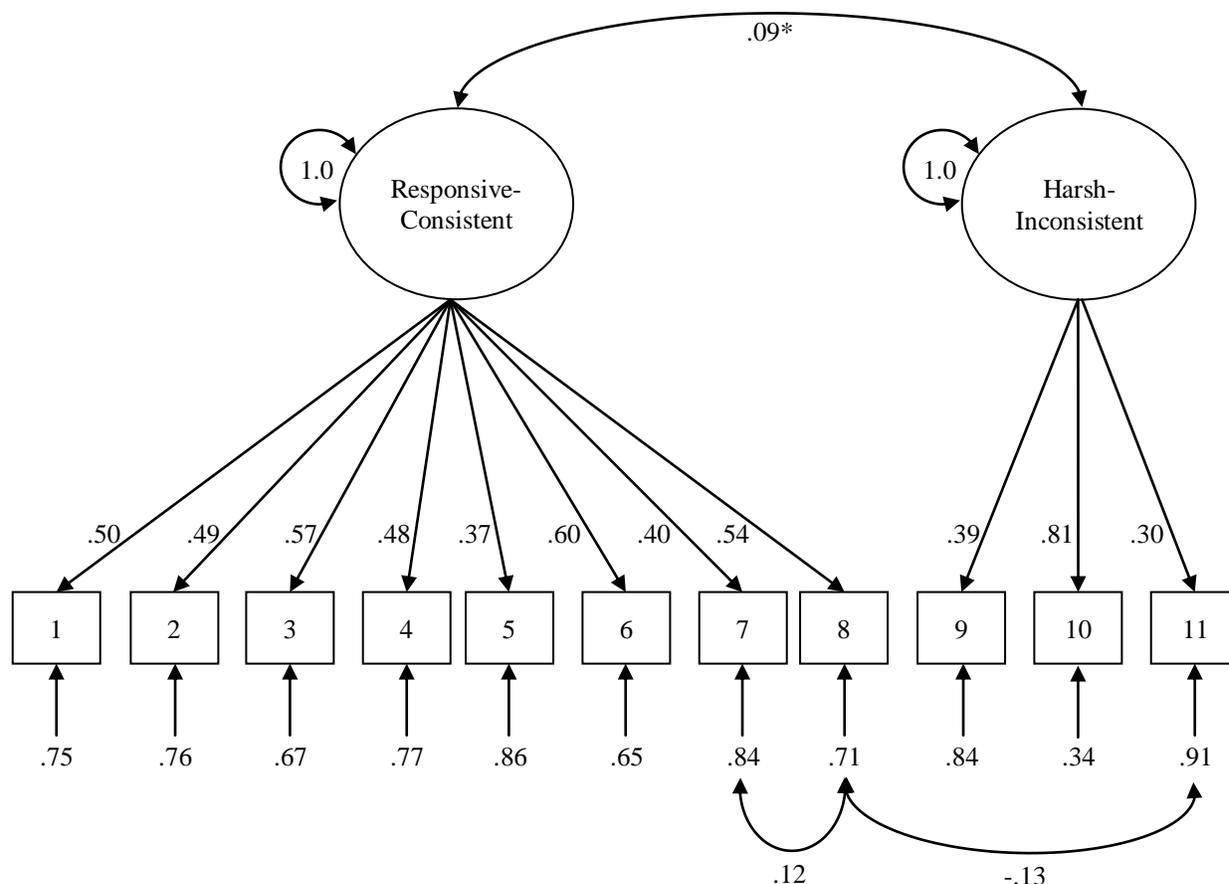
Figure 2. Measurement model of the two-factor PAAS with completely standardized estimates. 1 = Teach that misbehavior will always be punished; 2 = Encourage child to be independent; 3 = Encourage child to be curious; 4 = Have warm intimate moments with child; 5 = Am easygoing/relaxed with child; 6 = Make sure child knows I appreciate accomplishments; 7 = No difficulty sticking with rules; 8 = Follow through on dealing with misbehavior; 9 = Physical punishment is best; 10 = Believe child should be seen not heard; 11 = No energy to make child behave.
*p > .05.

Discussion

The purpose of the present study was to examine the factor structure of the newly-designed

PAAS to confirm its measurement model. Given that the items for the measure were chosen on a

conceptual basis, the present study represents the first attempt to empirically document the structural

validity of its theoretically-identified constructs of parenting. Contrary to its reported theoretical structure,

the current results suggest that with some modification, parenting behavior on the PAAS can be best

captured by two factors (Responsive-Consistent and Harsh-Inconsistent) and not four (Authoritative,

Authoritarian, Warmth, and Energy) as designed. Results also highlight the need to validate parenting measures prior to use in research.

Results of the present study contribute to a clearer understanding of the PAAS's structure and provide support for existing theories on parenting attitudes and approaches. First, the results of the CFA demonstrated that the original four-factor model of the PAAS was not a good fit to the observed data, and multiple indices suggested that a different solution may represent the relations among variables. Namely, high correlations between Authoritative, Warmth, and Energy demonstrated that these constructs overlapped and strongly suggested that they could be collapsed. Although it is common practice for researchers to design tools by selecting items based on apparent face validity, without validation of a measure's factor structure, it can be unclear whether the items are actually capturing the variables of interest. For instance, the Parenting Scale (Arnold et al., 1993) was originally purported to have a 3-factor structure: Laxness, Overreactivity, and Verbosity; however, several studies were unable to confirm the 3-factor model. Instead, multiple factor analyses suggested a two-factor solution with Laxness and Overreactivity (Prinzie et al., 2007; Reitman et al., 2001), though the items constituting these two scales differed between studies (e.g., Reitman et al.'s version used 10 items, Prinzie's version used 20 items). One possible conclusion is that parenting attitudes and behaviors are complex and challenging to measure, making it especially important to evaluate the structural validity of parenting measures in a given population. As was the case in the present study and with the Parenting Scale, it may turn out that the items chosen to identify constructs do not operate as predicted in a new sample, and different constructs may be later uncovered. Furthermore, the lack of clarity regarding what a measure is actually capturing can create difficulties when the measure is used to test other variables of interest, such as whether a certain parenting style is related to child behavior problems.

Second, results from EFA and CFA of the two-factor solution suggest that there are shared relations among items aimed at measuring authoritative parenting, warmth, and energy. The Responsive-Consistent factor consisted of items from the original scales of Authoritative and Energy, which appear to

reflect control and consistency in discipline (e.g., "I have little or no difficulty sticking with my rules for my child," "Once I decide how to deal with misbehavior, I follow through"). The Responsive-Consistent factor also represents a parenting approach that is warm and responsive (e.g., "My child and I have warm intimate moments together," "I make sure my child knows I appreciate his accomplishments"), entailing items from the original Warmth scale. The Responsive-Consistent factor appears to be most like common notions of authoritative parenting style, characterized by high levels of parental warmth and responsiveness, encouragement of autonomy, and control (Coolahan et al., 2002), as well as consistency in discipline (Luyckx et al., 2011). Given that the present study was conducted in a large representative sample of Head Start parents, results provide evidence for an authoritative parenting style, challenging previous notions that parenting may be more appropriately measured in dimensions (e.g., warmth, responsiveness), rather than broader styles, in low-income minority populations (e.g., Brody & Flor, 1998; Weis, 2002).

Third, in contrast, the Harsh-Inconsistent factor appears to capture parenting focused primarily on attitudes toward disciplining children. The best solution for this factor resulted in three items which reflect a harsh approach toward parent-child interactions ("I believe physical punishment is best" and "I believe a child should be seen and not heard"), as well as inconsistency in applying discipline ("At times, I just don't have the energy to make my child behave"). Although the original PAAS aimed to capture authoritarian parenting, traditional definitions suggest that authoritarian parenting style is characterized by low levels of warmth and high levels of control (Baumrind, 1966; Maccoby & Martin, 1983) and is not supported by the current findings. Instead, the Harsh-Inconsistent factor is more aligned with recent research using the Alabama Parenting Questionnaire (APQ; Frick, 1991), which includes a subscale for inconsistent discipline. Using the APQ, Luyckx et al. (2011) demonstrated an additional Uninvolved Style that was characterized by low monitoring, low positive parenting, and high inconsistent discipline. The PAAS's Harsh-Inconsistent factor seems most similar to Luyckx et al.'s Uninvolved parenting style. The current findings provide support for the notion that parents who endorse positive parent-child

relationships tend to report using consistent discipline or reinforcement, while parents who endorse negative or harsh parent-child relationships tend to report using inconsistent discipline.

Lastly, the PAAS's original Energy scale was relatively new to the field. Current EFA and CFA results found that the three items in the Energy scale split between the two resulting factors. Item 7 ("I have little or no difficulty sticking with my rules for my child even when close relatives are there") and 8 ("Once I decide how to deal with misbehavior, I follow through") demonstrate consistency in discipline and subsequently loaded onto the Responsive-Consistent factor. Item 11 ("At times, I just don't have the energy to make my child behave") loaded onto the Harsh-Inconsistent factor. However, the wording of item 11 and the large residual error (.913) may provide evidence for a different dimension of parenting. Janisse, Barnett, and Nies (2009) proposed a new scale to assess parents' perception of energy in the parental role (Perceived Energy for Parenting or PEP), noting that parenting is physically, emotionally, and cognitively taxing. It may be that item 11 actually captures a parent's stress or exhaustion in parenting, rather than his or her inconsistency in discipline, as items 7 and 8 seem to more clearly address. Such a conclusion would alter the conceptualization of the two-factor solution to the PAAS. For instance, perhaps parents who endorse harsh parenting approaches tend to report low levels of perceived energy for their parental role.

The current study adds to the field by providing much needed analysis of the measurement properties of the PAAS, a tool that is intended to provide information on parenting attitudes and approaches among parents of youth in Head Start. Documenting how items designed to measure parenting contribute to the identification of parenting styles may help the field draw solid conclusions when research questions address the relation between parenting and other variables like child behavior.

Limitations

The present results add to the field in important ways, not the least of which is providing the first empirical evaluation of a measure derived from one of the most widely-used assessment tools for parenting practices. Although the measurement model was improved, there are limits to the two-factor

PAAS. First, although the two-factor solution yielded some improvement in fit indices compared to the original four-factor model, the two-factor solution still had high residual variances and only moderate factor loadings. When evaluating the goodness-of-fit of new measures, some leniency is generally given until the measure is more refined (Kline, 2010). Nonetheless, high residual errors and moderate factor loadings may reflect error in measurement, or that there may be other variables influencing or accounting for variance among responses. For example, parenting behaviors and styles can vary based on ethnicity, culture, and socioeconomic status (e.g., Brody & Flor, 1998; Coolahan et al., 2008; Weis, 2002), or other factors, such as parental stress and mental illness. The present results, therefore, should be interpreted with some caution.

Second, the present study relied on a self-report questionnaire. While providing the ability to gather data in a timely and cost-effective manner, self-report measures allow for the risk of response bias. Specifically, parents may be reluctant to report negative parenting attitudes and instead give more socially appropriate responses (Dix & Gershoff, 2001), perhaps especially when receiving services like Head Start. Thus, self-report measures are limited in their ability reflect parents' actual practices (Dix & Gershoff, 2001). Observational tools are another avenue for obtaining information about parent-child interactions, although may be too limited in their ability to capture natural parenting behavior (Gardner, 2000).

Future Directions

The present study yielded preliminary, yet promising results about assessing parenting behaviors among Head Start parents. Additional tests in other samples of parents could provide further information on the validity of the PAAS's two-factor measurement model. Moreover, future research is needed to compare the PAAS with other, well-validated measures that assess similar parenting constructs. For example, the APQ (Frick, 1991) may be an appropriate comparison, particularly given its subscale for inconsistent discipline. Possible interpretations of item 11 ("At times, I just don't have the energy to make my child behave") could also be investigated. Because it is not clear whether item 11 captures

inconsistent discipline or lack of energy to parent, it may be helpful to administer the PAAS alongside the PEP, which assesses parents' energy levels (Janisse et al., 2009). For instance, if factor analysis demonstrates that item 11 shares variance with PEP items, there would be evidence for interpreting that item 11 captures parental energy.

Similarly, another way to refine the two-factor solution is to include additional items of parenting behaviors and attitudes that are typical of responsive, consistent, inconsistent, and harsh parenting, and repeat the process of EFA and CFA to investigate whether items load onto factors as suggested by previous literature and current findings. When designing a new measure, it is generally recommended that researchers overestimate and include more items than needed to identify common factors and that the items should be comprehensive enough to capture all aspects of the construct (Fabrigar et al., 1999). The measure is then pruned via a process of factor analyses, resulting in a refined and structurally valid assessment tool. FACES 2006 appears to have not followed such processes in their scale development. Moreover, even the present study's two-factor solution has weaknesses, namely elevated residual errors, suggesting that there may be other variables accounting for the variance among items. Therefore, future research could further validate the two-factor model by including additional items. It may be, for example, that when other items conveying inconsistent discipline and lack of energy are included and assessed in a sample of parents, the Harsh-Consistent factor is supported or is found to be more than one factor (e.g., a Harsh factor and Lack of Energy factor). This strategy comes with its own limitations: empirically-driven measures, or factors that are constructed based purely on how items are observed in the data, may not always make sense theoretically, hence, the importance of aiming to design measures based on conceptual and empirical bases.

FACES 2006 is a longitudinal project in a large, ethnically diverse sample of parents. Given that past research has demonstrated differences in parenting practices across different ethnic and SES groups (e.g., Brody & Flor, 1998; Weis, 2002), it may be informative to test factorial invariance of the PAAS to affirm that the parenting measure is capturing the same constructs regardless of group membership.

Confirming factorial invariance across groups is needed prior to making comparisons about parenting approaches between groups of parents. With more refinement, the PAAS demonstrates potential for being a useful instrument in identifying parents' levels of responsiveness, harshness, and consistency in discipline.

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