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Multidimenional Assessment Of Parenting Across Three Developmental Stages

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MULTIDIMENIONAL ASSESSMENT OF PARENTING ACROSS THREE DEVELOPMENTAL STAGES

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Abstract

BACKGROUND: The primary aim of the current study was to create a new measure of parenting practices, constituted by items from already established measures in order to advance the measurement of parenting practices in clinical and research settings. The current study utilized five stages designed to select only the best parenting items, establish a factor structure consisting of positive and negative dimensions of parenting, meaningfully consider child developmental stage, ensure strong psychometric properties, and provide initial evidence for the validity of the final measure.

METHODS: A total of 1,790 parents (44% fathers) were recruited online through Amazon's Mechanical Turk for three cohorts: Stages 1 ($N = 611$), 2 ($N = 615$), and 3 ($N = 564$). Each sample was equally divided by child developmental stage: Young childhood (3 to 7 years old), middle childhood (8 to 12 years old), and adolescence (13 to 17 years old). Parenting items were selected and adapted from several well-established parenting scales. Measure development followed five rigorous stages using separate samples for each set of factor analyses as advocated by methodologists. Advanced statistical methods were employed for determining final factor structure (e.g., exploratory structural equation modeling - ESEM) and reliability (omega coefficient; longitudinal ESEM), as well as providing initial support for validity (e.g., latent curve modeling - LCM).

RESULTS: Through a five-stage empirical approach, the Multidimensional Assessment of Parenting Scale (MAPS) was developed, successfully achieving all aims. The MAPS factor structure included both positive and negative dimensions of warmth/hostility and behavioral control that were appropriate for parents of children across the developmental span. Seven out of eight MAPS subscales demonstrated excellent reliability (above .80). LCM analyses provided initial support for the validity of all MAPS subscales.

DISCUSSION: Although the stages of the current study embody an empirical approach to scale development, it also has important theoretical aspects. The factor structure of the MAPS updates prior the theoretical conceptualization of parenting practices (Schaefer, 1959) in order to inform new research and applications. Future directions are discussed.

Acknowledgements

As I reflect on the past ten years of my higher education, it is inconceivable to imagine how any of this would have been possible without my mentor, Rex Forehand. Rex, I am incredibly grateful to you for your unwavering dedication to my success. Your influence has extended far beyond that of graduate mentor, as you have graciously assumed the roles of father figure and friend in support of my growth through these formative years of my life. You continue to set a wonderful example of how to be a world class researcher and person, which I can only hope to emulate. It is to you, that I owe this accomplishment, and many more to come. I look forward to continuing our collaboration and friendship for many years to come.

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Introduction

One of the most studied and well-established themes of psychological research is the importance of family functioning for children's cognitive, social, and emotional development (Lovejoy, Weis, O'Hare, & Rubin, 1999). In particular, any theoretical model or empirical research designed to explain the development of child psychosocial adjustment (e.g., child noncompliance, anxiety, social competence) must account for the influence of parenting, either directly or indirectly (McKee, Jones, Forehand, & Cuellar, 2013). This assumption has been substantiated by significant empirical support for the reliable and robust associations between parenting practices and child psychopathology (e.g., Baumrind, 1978; Chorpita & Barlow, 1998; Darling & Steinberg, 1993; Dishion & McMahon, 1998; Kimonis, Frick, & McMahon, 2014), including both internalizing (e.g., McLeod, Weisz, & Wood, 2007; McLeod, Wood, Weisz, 2007; Rapee, 2012) and externalizing (e.g., Davies & Cicchetti, 2014; Frick, Christian, & Wootton, 1999; Lahey et al., 2011) problem behaviors.

Models of parenting

Despite the variation in child outcomes in response to the parenting variables examined, researchers studying parenting have focused on remarkably similar parenting dimensions – warmth, hostility, behavioral control, and monitoring (Darling & Steinberg, 1993; McKee et al., 2013; Patterson & Fisher, 2002). This substantial body of research primarily focuses on two broad dimensions or composites of parenting behavior: Positive parenting typified by warmth and affection, positive reinforcement, firm and consistent discipline, and active involvement in and monitoring of child and adolescent activities;

and negative parenting typified by high levels of hostility, low levels of warmth and involvement, coercive disciplinary tactics, psychological control, and inconsistent monitoring. Parenting, both positive and negative, has been explored from a variety of perspectives, ranging from a focus on (1) the effects of broad typologies (constellations) of parenting (e.g., authoritative parenting) to (2) the main effects of particular parenting dimensions (e.g., parental warmth). Both perspectives will be reviewed below.

Constellations of parenting behaviors. In one of the earlier conceptualizations of parenting, researchers suggested that it was particular, fixed constellations of parenting behaviors, as opposed to the unique impact of any single parenting practice, that contributed to child and adolescent competency or psychopathology. This idea has its origin in Baumrind's traditional paradigm, which conceptualized parenting types as common combinations of varying levels of behavioral control and warmth (Maccoby & Martin, 1983). Authoritarian parenting was characterized by low levels of warmth and high levels of behavioral control (i.e., harsh discipline). Permissive parenting was characterized by high levels of warmth and caring but low levels of behavioral control. Neglecting parenting was characterized by a combination of low levels of both warmth and control. Authoritative parenting was initially conceptualized as high levels of parental warmth presented in conjunction with high levels of behavioral control or supervision (Baumrind, 1966). Over time, the authoritative parenting approach was modified by Steinberg and colleagues to include psychological autonomy, or democracy, to more fully account for adolescent healthy psychological development and school success (Steinberg, 1990; Steinberg, Lamborn, Dornbusch, & Darling, 1992). All of these parenting styles have been associated with child and adolescent internalizing and

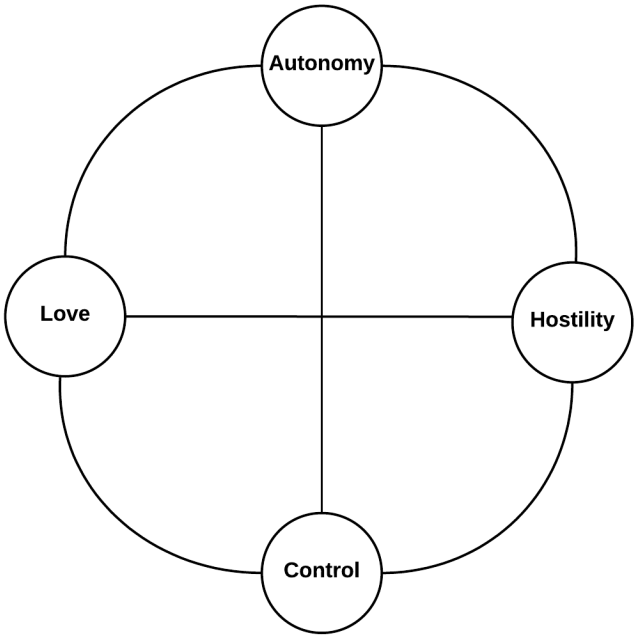
externalizing behaviors (e.g., Akhter, Hanif, Tariq, & Atta, 2011; Baumrind, 1989; Braza et al., 2013; Muhtadie, Zhou, Eisenberg, & Wang, 2013; Steinberg, Blatt-Eisengart, & Cauffman, 2006; Williams et al., 2009) with authoritarian, permissive, as well as neglecting parenting being *negatively* related to healthy psychosocial adjustment. In contrast, authoritative parenting has been shown to be *positively* related to healthy adjustment in children and adolescents (e.g., Baumrind, 1966; 1989; Connell & Francis, 2014; Luyckx et al., 2011; Maccoby & Martin, 1983; Williams et al., 2009).

Parenting dimensions. Although research based on Baumrind's typological approach to parenting has yielded an impressive body of findings linking the constellations of parenting behaviors to child outcomes, this approach does not allow us to examine the impact of specific components (e.g., warmth) on child adjustment (Bean, Bush, McKenry, & Wilson, 2003; Darling & Steinberg, 1993; Davidov & Grusec, 2006). In other words, the focus of study on the parenting composite (e.g., the coupling of warmth and firm control in authoritative parenting) precludes our understanding of the differential effects of specific parenting practices, or their interrelations, on child outcomes. Methodologically, measuring parenting at the composite level impedes necessary dismantling of the typology to achieve higher resolution modeling to illuminate these effects between specific parenting behaviors and specific child outcomes (e.g., Choe, Olson, & Sameroff, 2013; Jones, Forehand, Rakow, Colletti, McKee, & Zalot, 2008; McKee et al., 2008; McKee, Colletti, Rakow, Jones, & Forehand, 2008).

As a result, some researchers have advocated for a more differentiated approach to examining the relation of specific parenting behaviors and specific child outcomes (e.g., Barber, 1997; Forehand, Jones, & Parent, 2013; Herman, Dornbusch, Herron, &

Herting, 1997). The most prominent theoretical conceptualization focusing solely on parenting domains was offered by Schaefer (1959) who synthesized early parenting research and formulated a circumplex model of maternal behavior. Schaefer used factor analyses across samples to support a parsimonious hierarchical model of parenting behavior with two broadband domains of love (warmth) versus hostility and autonomy versus control (see Figure 1). Schaefer's model aimed to create a parsimonious nomological network of parenting such that all narrowband parenting domains could be placed in the model based on the behaviors degree of warmth/hostility and autonomy/control.

Figure 1. *Schaefer's circumplex model of parenting*



Consistent with Schaefer's conceptualization (1959), three key dimensions have emerged as the primary elements of parenting: warmth (e.g., affection, involvement, supportiveness, attentiveness, acceptance); hostility (e.g., harshness, irritability, intrusiveness); and behavioral control, ranging from over- (e.g., physical punishment) to

under-control (e.g., lax control). More of the behavioral indicators used to operationalize each of these constructs are presented in Table 1.

Table 1. *Behaviors representative of parental warmth, control, and hostility*

Warmth	Behavioral Control	Hostility
Acceptance	Behavioral Directives	Aggression
Affection	Firm Control	Anger
Involvement	Monitoring	Averseness
Positive Affect	Rules	Criticisms
Positive Behavior	Physical Punishment	Intrusiveness
Supportiveness	Permissiveness	Irritability
Praise	Inconsistency	Overreactivity
Child-centeredness	Neglect	Parent-centeredness
Nurturance	Psychological Control	Rejecting

Despite some investigations conceptualizing warmth versus hostility and over- versus under-control as opposite endpoints of the same spectrums, Schaefer's theory and recent work has considered them distinct categories of behaviors (e.g., Borden et al., 2014). Conceptualizing warmth, hostility, over-control, and under-control as separate constructs provides richer information about parenting, as it becomes possible to derive information on the presence and absence of each. For example, the presence and absence of warmth can be examined distinctly from the presence and absence of hostility. Furthermore, recent work (Parent, McKee, & Forehand, 2016) has shown that dimensions of over-control (e.g., harsh control) and under-control (e.g., lax control) are not mutually exclusive, and that youth with parents who report using high levels of harsh control and high levels of lax control showed the most internalizing problems, as compared to youth whose parents reported high levels of either one dysfunctional discipline tactic alone.

Comparable to the body of research inspired by Baumrind's typologies, there are numerous empirical investigations linking specific parenting dimensions to specific child

outcomes. First, when warmth is examined, a number of studies have documented a relation between lower levels of parental warmth and higher levels of negative child outcomes, particularly externalizing symptomatology (e.g., Burt, Klahr, Neale, & Klump, 2013; Choe et al., 2013, Lee & Gotlib, 1991; Masten & Coatsworth, 1998; Olson, Bates, Sandy, Lanthier, 2000). In addition, low levels of warmth are associated with internalizing symptoms (e.g., Lansford et al., 2014; Luebbe & Bell, 2014; Hammen, Shih, & Brennan, 2004; Parent, Jones, Forehand, Cuellar, & Shoulberg, 2013). Second, both under (lax) and over (harsh) control have been associated with increased child externalizing (e.g., Dishion, Patterson, Stoolmiller, & Skinner, 1991; Hanisch, Hautmann, Pluck, Eichelberger, & Dopfner, 2014; Lansford et al., 2014; Parent, Forehand, Merchant, Long, & Jones, 2011) and internalizing problems (e.g., Barber, 1996; Bøe et al., 2014; Hektner, August, Bloomquist, Lee, & Klims-Dougan, 2014; Lansford et al., 2014). Finally, relatively higher levels of parental hostility have been associated with youth externalizing behaviors (e.g., Conger, Ge, Elder, Lorenz, & Simons, 1994; Harold, Elam, Lewis, Rice, & Thapar, 2012; Wang & Kenny, 2014) and internalizing symptoms (e.g., Buehler, Benson, & Gerard, 2006; McKee et al., 2014; Rakow et al., 2011; Wang & Kenny, 2014).

Parenting styles versus practices. In an effort to address the tension in the literature between the two primary theoretical and measurement approaches to understanding parenting and child socialization (i.e., broader parenting styles versus more specific parenting practices), Darling and Steinberg (1993) proposed an integrative model that incorporates both distinct, yet overlapping, parenting approaches. Parenting practices are "behaviors defined by specific content and socialization goals" (p. 492). In

the domain of academic achievement, for example, germane parenting practices may include attendance at parent-teacher conferences, establishing a specific homework routine with the child, and discussing assignments. Parenting style, alternatively, is distinguished as the "emotional climate in which the parents' behaviors are expressed" (p. 492) and includes tone of voice, body language, and temperament, and related specific parenting behaviors through which children infer the parent's emotional attitude. Parenting practices tend to be assessed in terms of the content and frequency of specific parenting behaviors rather than the quality of parenting behaviors (Stevenson-Hinde, 1998), while parenting styles pertain to the quality and valence of parent–child interactions. In short, parenting practices encompass what parents do and style implies how parents do it.

Darling and Steinberg (1993) assert that practices and style are each influenced by parent socialization goals and values, and that each influences child development through distinct processes. Specifically, they theorize that parenting practices directly impact child outcomes, while parenting style acts as a moderator of the relation between specific parenting practices and specific outcomes. Although the widespread adoption of such a model would advance the conceptual uniformity of the vast body of parenting research and allow for comparisons across studies, the current literature continues to represent a variety of model orientations and operational definitions of parenting dimensions.

Issues with the measurement of parenting

Assessment is a fundamental element in scientific research as the interpretation of parenting studies depends heavily on the assessment methods used and the confidence

one can place on these measures (Kazdin, 2003). Despite substantial theory and research related to parenting, there is very little agreement on how best to measure parenting (Locke & Prinz, 2002). Direct observations of parent-child interactions by independent raters are often seen as the "gold standard" for the reliable, objective assessment of parenting (McKee et al., 2013; Patterson, 1982; Taber, 2010). However, observations are both time-consuming and costly to collect and code (Lovejoy et al., 1999). Furthermore, observations of parenting are typically collected in a contrived setting (e.g., university laboratory setting), thereby potentially limiting the external validity of these observations as well as likely capturing a restricted range of observed parenting behaviors relative to actual parenting practices (Gardner, 2000).

Alternatively, questionnaire measurement of parenting behaviors provides a more economically, and practically feasible method for broad use in research and clinical settings (e.g., Gerdes et al., 2007; Leung & Slep, 2006). In general, questionnaires are the most commonly used type of measures within clinical, counseling, and educational psychology (Kazdin, 2003), largely because of ease of administration, low cost, and brief completion times (Fiske, 1987; Ramey, 2012). An additional advantage to questionnaires, as opposed to observational methods, is the ability to capture accounts of a broader range of parenting behaviors than might be exhibited during a one-time observation, which provides a more comprehensive portrait of actual parenting practices (Zaslow et al., 2006).

Unfortunately, the validity and reliability of questionnaire-reported parenting are not without issue; as commonly cited over the past three decades (e.g., Parent, Forehand, Watson, Dunbar, Seehuus, & Compas, 2014; Salihovic, Kerr, Ozdemir, &

Pakalniskience, 2012). Primarily, researchers have consistently pointed to the need for multidimensional, high-utility parenting measures that have strong psychometric properties (i.e., reliability and validity) and are sensitive to changes in parenting across child development (Hurley, Huscroft-D'Angelo, Trout, Griffith, & Epstien, 2014; Kendziora & O'Leary, 1993; Locke & Prinz, 2002; O'Connor, 2002). These core issues will be discussed in further detail in the following sections as the overarching goal of the current study was to begin to address these measurement issues.

Psychometric characteristics. The strength of psychometric properties of questionnaire-reported parenting has been called into question (e.g., Salihovic et al., 2012). In a recent review of the psychometrics of parenting measures (Hurley et al., 2014), the authors described the preponderance of flawed parenting measures, most of which have psychometric properties below acceptable standards. Hurley et al. (2014) conclude that the current state-of-the-field is "dismal" (p. 820). Issues with reliability are of particular concern given that almost all parenting measures have *at least* one subscale that has been consistently shown to have an internal consistency coefficient (alpha) below .80, the commonly cited minimum value for good reliability (Nunnally, 1978; Nunnally & Bernstein, 1994; see Carmines & Zeller, 1979; Henson, 2001; Lance, Butts, & Michels, 2006; Loo, 2001; Vassar & Bradley, 2010, for additional endorsements of this criterion). Further, a review of the last five years of parenting research published in top journals (e.g., *Child Development*, *Journal of Abnormal Child Psychology*, *Journal of Child Psychology and Psychiatry*) found that 84% of studies yielded parenting questionnaire reliability estimates below .80 (Stanger, Parent, & Pomerantz, 2016). Lower reliability may reduce power to detect true differences due to the impact of error

variance on effect sizes (Kazdin, 2003). Furthermore, "there is virtual consensus among researchers that, for a scale to be valid and possess practical utility, it must be reliable" (Peterson, 1994, p. 381). Thus, improving the reliability of parenting measures is of upmost importance.

Another issue is the limited range of scores (ceiling or floor effects) commonly obtained on parenting measures: The measure sensitivity may artificially exclude the observation of actual group differences that exist beyond the range of detectable scores (Kazdin, 2003). For example, two recent investigations of the efficacy of behavioral parent training (BPT) for young children with disruptive behavior disorders (Jones et al., 2014; Forehand, Merchant, Parent, Long, Linnea, & Sulman Baer, 2011) showed no changes in parent reported parenting practices from pre- to post-treatment. Given that (a) BPT is a robust evidence-based treatment for the prevention and treatment of disruptive behaviors (for a review, see Forehand et al., 2013), (b) child problem behavior showed significant improvements in both the Jones et al. and the Forehand et al. studies, and (c) the putative mechanism for change in youth behavior in BPT is change in parent behavior (for a review, see Forehand, Lafko, Parent, & Burt, 2014), measurement issues are likely the culprit. Indeed, upon further examination of the parenting measure means, positive parenting practices [assessed by the Alabama Parenting Questionnaire (APQ; Frick, 1991) for both studies] had an average baseline value falling near the peak of the measurement range, indicating a presumed ceiling effect. Thus, improving parenting measures to limit ceiling or floor effects in order to detect the true range of scores is important for research and, in turn, parenting theory.

Positive and negative dimensions. Few measures tap both the positive and negative dimensions of parenting that might be relevant to the etiology and course of common childhood and adolescent disorders (Darling & Steinberg, 1993). For broad adoption of a parenting measure by both researchers and clinicians, the measure must be relatively brief and assess multiple domains of parenting in a single instrument. For example, the Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) has established strong psychometric properties for two types of dysfunctional disciplinary practices of parents with young children but does not include items assessing positive parenting practices such as warmth. Given that both positive and negative parenting practices are of interest to researchers and clinicians, use of the Parenting Scale would require use of another measure that assesses positive dimensions.

The standard of a high utility measure combined with the requirement for strong psychometric characteristics excludes many of the established parenting measures. For example, The Alabama Parenting Questionnaire (APQ; Frick, 1991) and the Parenting Practices Questionnaire (PPQ; Robinson, Mandleco, Olsen, & Hart, 1995) each assess both positive and negative parenting practices; however these measures each lack strong psychometrically defensible scales (e.g., coefficient alpha at or above .80 in each domain) in both the positive and negative domains. Yet again, use of one of these measures requires the supplemental use of another parenting measure to compensate for issues with the first.

Sensitivity to child development. Another issue common in the assessment of parenting is lack of sensitivity to shifts in parenting practices across child development. While some parenting practices remain constant throughout childhood, others change

drastically as children develop, some are discontinued altogether, and others are newly introduced in later developmental stages. Given that there is substantial change in the developmental challenges faced by children across development and, in turn, changes in the role and challenges of the caregiver (Cummings, Davies, & Campbell, 2000), it is quite simple and universally accepted that parenting changes occur across child development (Locke & Prinz, 2002). In fact, healthy parenting practices *need* to adapt to child development stages to accommodate the substantial changes in child cognitive abilities, behaviors, social context, and emotional expression from the preschool years through adolescence (see Forehand & Wierson, 1993, for a review). O'Connor (2002) notes that "although it should be obvious that the parenting tasks for a preschooler differ from those for an early adolescent, there are few data documenting how parenting behavior is modified by the child's development, and most studies of change in parent-child relationships focus on a limited age range, such as the transition to adolescents" (p. 557).

Despite the assumption of parenting transition across child development, parenting questionnaires do not reflect this flexibility, as most ignore child developmental stage all together. Some measures limit the age range, which circumvents this issue, but doing so precludes the examination of change over the course of development, which is the question of foremost interest to child clinical and developmental psychologists (Cummings et al., 2000). Other measures are used for a wide range of ages without established measurement invariance, inappropriately utilizing the same items to assess parenting of a three-year-old and parenting of a 16-year-old. This undoubtedly spurs the question of developmental shifts in parenting, as mentioned above.

Overall, the parenting literature lacks a clear conceptualization of the change and continuity in parenting practices as they relate to child outcomes over the course of child development. Darling and Steinberg (1993) called for research on how parenting style and practices change across the life course. They stated in their seminal paper that we still know little about important questions such as the continuity or stability of parenting over time, the influence of changes on children (e.g., timing of parental autonomy granting), or the relative advantages and disadvantages of different aspects of parenting during different developmental stages. Two decades later, this call for research remains unaddressed in the literature. Measures assessing parenting reflect this deficit in the literature and *no* measure of parenting has been developed to assess the continuity and changes in parenting practices across child development.

The current study

In the past century, there have been over 30,000 scholarly publications in the broad area of parenting. Despite this history, the field is and will continue to be limited by the lack of a well-established comprehensive multi-dimensional measure of parenting. With the continued emphasis on evidence-based treatments for childhood disorders, many of which involve a parenting component, we must also place an emphasis on evidenced-based assessment. The Achenbach System of Empirically Based Assessment (ASEBA; Achenbach, 2009) set a high standard that has greatly benefited research on child and adolescent psychopathology. ASEBA did so through providing clinicians and researchers with a single system of comprehensive multidimensional measures that are psychometrically strong, are sensitive to change, discriminate between behaviors on both

high and low ends of a continuum, have gender and cultural norms, and are sensitive to child developmental changes. ASEBA provided a "one-stop-shop" for evidence-based assessment of child psychopathology and the current study's primary aim was to do the same for the assessment of parenting.

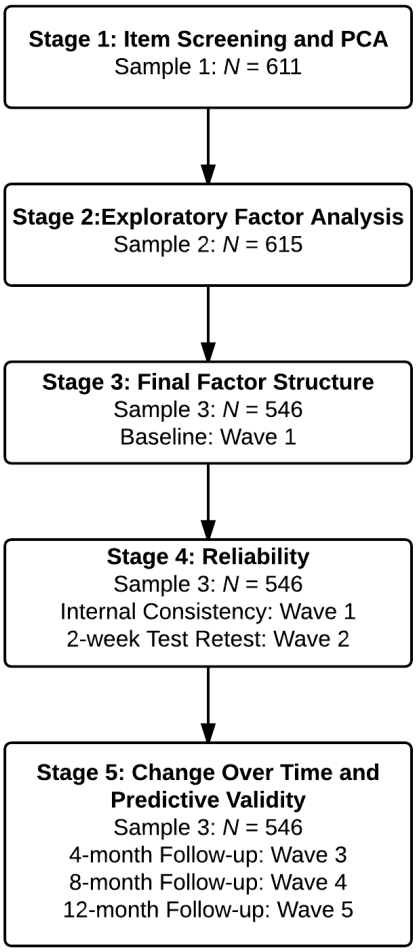
The primary aim of the current study is to advance the measurement of parenting practices in clinical and research settings by deriving a new evidence-based measure. The current study served to fill a gap in the field, based on essential observations that no single current measure of parenting possesses sufficiently strong psychometric properties (particularly reliability), assesses both positive and negative parenting domains, is sufficiently sensitive to detect potential developmental differences in parenting practices, and provides a user-friendly, comprehensive multidimensional assessment of parenting (i.e., a single system of measures that can be used across a wide range of child ages reported by a range of reporters). The current study employed a five-stage study design aimed to develop and provide initial validity of such a measure. As was the case for the ASEBA system development process (Achenbach, 2009), the first step for the development of the one-stop-shop for parenting assessment, and the focus of this proposal, began with a parent report version to eventually branch out and expand (e.g., to child report, partner report). The current study borrowed ASEBA's developmental model (Achenbach, 2009) emphasizing empirically-based methods and data to theoretical conceptualizations (as opposed to the reverse), which, in turn, may provide road maps for new research and applications.

Although the current proposal assumed no single measure currently suffices for comprehensive multidimensional assessment of parenting, it also assumed that there is

some utility to items within current parenting measures. These items are often theoretically informed and were designed by some of the foremost researchers of the last 50 years of parenting research. Thus, stage one of the proposal study aimed to combine all items from some of the best available parenting questionnaires into a single data set. This is the intuitively appealing part of the current method: To use items from existing, acceptable parenting scales in order to create a stronger comprehensive measure of positive and negative parenting practices that represents the "best of the best" items to assess parenting. Another innovative aspect of the current method is that parents of children in three broad age ranges (young childhood, middle childhood, and adolescents) were recruited. The item pool was examined for factor structure at each developmental stage. This approach is responsive to the previously mentioned calls for identifying and assessing parenting behaviors appropriate for different stages of child development (Darling & Steinberg, 1993; Locke & Prinz, 2002; O'Connor, 2002). Such an approach will allow for better developmental mapping of parenting and norms sensitive to child age.

The current study consists of five stages that are delineated in Figure 2. The five stages were designed to select only the best parenting items, establish a factor structure consisting of all major domains of parenting, ensure strong psychometric characteristics, and provide initial evidence for the validity of the final measure. Procedures and analyses for development of the measure were conducted separately by child developmental stage to ensure that the factor structure and the items retained were sensitive to continuity and developmental shifts in parenting.

Figure 2. *Flow diagram of the five stages.*



Stage 1 entailed the administration of the initial 179 parenting items from eight established parenting scales to 611 parents of children, ages 3 to 17. The primary goal of Stage 1 was item reduction, whereby the item pool was reduced to a manageable size by eliminating items with limited variability. Stage 2 involved administering the items retained in stage 1 to a separate sample of 615 parents. The primary goal of stage 2 was to further distill the number of parenting items to a more meaningful set and explore the underlying factor structure of the data. Stage 3 entailed administration of the items retained in stage 2 to another separate sample of 564 parents. The primary goal of stage 3 was to construct an explicit model of the factor structure underlying the data, and

statistically test fit. Stages 4 and 5 involved short-term longitudinal follow-up of the sample recruited in stage 3. The primary goal of stage 4 was to assess internal and two-week test-retest reliability and the primary goal of the 5th stage was to provide initial support for validity utilizing data from four assessments across 12 months.

It was hypothesized that separate narrowband factors would emerge for warmth, domains of behavioral control, and hostility in a hierarchical structure akin to ASEBA, with broadband positive and negative parenting domains. Additionally, it was hypothesized that the items constituting parenting factors would differ by the developmental stage of the child. For stage 5, it was hypothesized that cross-sectional associations between all parenting subscales and both child internalizing and externalizing problems would emerge such that positive parenting subscales would be negatively and negative parenting subscale positively associated with each child problem behavior. Further, given the theory and research establishing reciprocal associations between parenting and child behavior over time (Granic & Patterson, 2006), it was hypothesized that parenting at baseline would be associated with the trajectory of change in child behavior over the course of a year, and vice versa; that is, child behavior at baseline would be related to the trajectory of change in parenting over the same time period.

Methods

Overview

A total of 1,790 parents were recruited online through Amazon's Mechanical Turk (MTurk) for three cohorts: Stages 1 (N = 611), 2 (N = 615), and 3 (N = 564) (see

Figure 2). For each stage parents responded to a study that was listed separately for three age groups to ensure approximately equal sample sizes in each group: young childhood (3 to 7 years old), middle childhood (8 to 12 years old), and adolescence (13 to 17 years old). As MTurk is a relatively new recruitment tool, it is described in the following paragraphs to help the reader understand the remaining description of the methodology.

Mechanical Turk is currently the dominant crowdsourcing application in the social sciences (Chandler, Mueller, & Paolacci, 2014) and is becoming a popular method for recruiting large samples at relatively low cost (Shapiro, Chandler, & Muellar, 2013). On MTurk, workers browse HITs by title, keyword, reward, availability, and so on, and complete HITs of interest. Participants are compensated by requesters upon successful completion of tasks (for an introduction to using MTurk, see Mason & Suri, 2012).

There are several advantages for the use of MTurk that lent themselves to the current study. First, MTurk data can be collected quickly (e.g., Buhrmester, Kwang, & Gosling, 2011) for a minimal cost (Horton & Chilton, 2010). Second, a diverse range of participants (e.g., race, SES, household composition) can be recruited from across the United States (e.g., Paolacci, Chandler, & Ipeirotis, 2010). In fact, MTurk participants are slightly more demographically diverse than are standard Internet samples and are significantly more diverse than samples recruited near college campuses (e.g., Casler, Bickel, & Hackett, 2013). Third, data obtained are at least as reliable as those obtained via traditional methods (e.g., Buhrmester et al., 2011). Fourth, participation and data quality are unaffected by compensation rate or task length (Buhrmester et al., 2011; Shapiro et al., 2013). Fifth, as demonstrated by the current study, crowdsourcing methods afford an opportunity to recruit not only mothers, but also fathers, who have been long

underrepresented in traditional research (Phares, 1992; Phares, Fields, Kamboukos, & Lopez, 2005). Sixth, the MTurk community is governed by strong norms of honesty and accuracy (Rand, 2012; Suri, Goldstein, & Mason, 2011). Seventh, survey completers are anonymous to requesters (yet identifiable to investigators via MTurk IDs), the public anonymity protects respondent privacy, and therefore increases response rates (O'Neil & Penrod, 2001). Finally, each MTurk ID is unique, making it possible to prevent any individual user from participating in a HIT more than once, simultaneously maintaining data integrity and participant anonymity.

Participants

Stage 1 participants. Data from 611 parents of children between the ages of 3 and 17 were included in the first stage. Sample demographics by developmental stage (young childhood, middle childhood, and adolescent samples) are presented in Table 2. Overall, parents were an average of 34 years old (SD = 7.66) and were roughly equally represented by mothers and fathers (52.7 % mothers). Participants were predominately White (77.0%), with an additional 7.9% who identified as Black, 8.3% as Latino, 5.8% as Asian, and 1% as American Indian, Alaska Native, or other Pacific Islander. Parents' education levels ranged from not completing high school or equivalent (0.3%), obtaining a H.S. degree or GED (12.8%), attending some college (32.1%), earning a college degree (39%), and attending at least some graduate school (15.8%). A majority of parents were employed full-time (64%), with 21.6% reporting employment at a part-time level, and 14.4% reporting unemployment at the time of study. Reported family income ranged from under $5,000 per year to over $100,000 per year; 15.1% falling at less than $30,000

per year, 15.7% between $30,000 and $40,000, 25.7% between $40,000 and $60,000, 24.2% between $60,000 and $100,000, and 10.1% at least $100,000. Parent marital status was organized into three categories: 18.1% single (not living with a romantic partner), 66.6% married, and 15.3% cohabiting (i.e., living with a romantic partner but not married). The majority of youth were boys (57%), with 38% being an only child.

Stage 2 participants. Data from 615 parents of children between the ages of 3 and 17 were included in the second stage. Sample demographics by developmental stage (young childhood, middle childhood, and adolescent samples) are presented in Table 3. Overall, parents were an average 36 years old (SD = 12.56) and were roughly equally distributed between mothers and fathers (55.5 % mothers). Participants were predominately White (77.3%), with an additional 13.1% who identified as Black, 4.4% as Latino, 4.1% as Asian, and 1.1% as American Indian, Alaska Native, or other Pacific Islander. Parent education level ranged from not completing high school or equivalent (1%), obtaining a H.S. degree or GED (14.1%), attending some college (32.5%), earning a college degree (38%), and attending at least some graduate school (14.3%). A majority of parents were employed full-time (59.7 %) with 21.3% reporting employment at a part-time level, and 19% reporting unemployment. Reported family income ranged from under $5,000 a year to over $100,000 a year; with 12.5% falling at less than $30,000 per year, 27.1% between $30,000 and $50,000, 12.7% between $50,000 and $60,000, 24.4% between $60,000 $100,000, and 9.4% at least $100,000. Parent marital status was organized into three categories with 20% reporting single status, 58.9% married, and 21.1% cohabiting relationship. The majority of youth were boys (56.9%), with 35.9% being an only child.

Stages 3 – 5 participants. Data from 564 parents of children between the ages of 3 and 17 were included in stages 3 -5 stage. Sample demographics by developmental stage (young childhood, middle childhood, and adolescent samples) are presented in Table 4 for participants at the baseline assessment. Overall, parents were on average 36.35 years old (*SD* = 8.13) and 60.8% were mothers. Participants were predominately White (79.0%), with an additional 9.8% who identified as Black, 5.7% as Latino, 4.5% as Asian, and 1.0% as American Indian, Alaska Native, or other Pacific Islander. Parents' education level ranged from not completing high school or the H.S. equivalent (.4%), obtaining a H.S. degree or GED (12.8%), attending some college (30.5%), earning a college degree (40.6%), and attending at least some graduate school (15.9%). A majority of parents were employed full-time (61.7%) with 19.5% reporting employment at a part-time level, and 18.8% reporting unemployment. Reported family falling at less than $30,000 per year, 28.7% between $30,000 and $50,000, 19.5% between $50,000 and $70,000, 16.8% between $70,000 and $100,000, and 13.3% at least $100,000. Parent marital status was organized into three categories with 17.1% reporting being single, 64.6% being married, and 18.3% being in a cohabiting relationship. Approximately half of youth were boys (54.4%) with 38.5% being an only child. Retention was 80.7% for the two-week follow-up, 66.1% for the 12-month follow-up, and retention at any time point after the two-week follow-up was 74.6%.

Table 2. *Sample demographic characteristics for stage 1 by developmental stage.*

	M (S.D.) or Percentage		
	Young Childhood ***n*** **= 200**	**Middle Childhood** ***n*** **= 209**	**Adolescents** ***n*** **= 202**
Parent Age	29.76 (5.67)	33.01 (7.39)	40.54 (18.34)
Parent (% Mothers)	52.5%	49.3%	56.4%
Parent Race			
White	75.0%	76.0%	80.1%
Black	8.0%	8.8%	7.0%
Latino/a	9.0%	7.8%	8.0%
Asian	7.0%	6.9%	3.5%
Other	1%	.5%	1.5%
Parent Marital Status			
Single	19.0%	14.1%	21.3%
Married	67.5%	69.9%	62.4%
Cohabitating	13.5%	16.0%	16.3%
Parent Education			
Did not complete H.S.	1.0%	0.0%	0.0%
H.S. or GED	11.5%	10.5%	16.3%
Some College	35.5%	28.2%	32.7%
College Degree	38.5%	42.6%	35.6%
> College Degree	13.5%	18.7%	12.3%
Parent Employment Status			
Full-time	58.0%	67.9%	65.8%
Part-time	23.5%	20.1%	21.3%
Unemployed	18.5%	12.0%	12.9%
Family Income			
Under $30,000	22.5%	23.9%	15.8%
$30,000 - $49,999	29.0%	31.5%	37.2%
$50,000 – $69,999	25.0%	15.4%	18.8%
$70,000 – $99,999	14.5%	19.6%	14.8%
$100,000 or more	9.0%	9.6%	11.9%
Family Neighborhood			
Urban	33.0%	32.5%	31.7%
Suburban	48.0%	52.2%	49.5%
Rural	19.0%	15.3%	18.8%
Number of Children	1.77 (.95)	1.83 (1.64)	1.83 (.90)
Child Age	5.25 (1.38)	10.21 (1.57)	14.42 (1.38)
Child Birth Order			
First Born	34.0%	38.8%	54.0%
Middle Child	8.5%	7.7%	4.0%
Youngest Child	19.5%	12.0%	7.9%
Only Child	38.0%	41.6%	34.2%
Child Gender (% Girls)	52.5%	39.7%	37.1%

Table 3. *Sample demographic characteristics for stage 2 by developmental stage.*

	M (S.D.) or Percentage		
	Young Childhood ***n*** **= 210**	**Middle Childhood** ***n*** **= 200**	**Adolescents** ***n*** **= 205**
Parent Age	32.61 (7.44)	34.43 (6.92)	40.54 (18.34)
Parent (% Mothers)	59.0%	51%	53.2%
Parent Race			
White	78.4%	72.7%	80.5%
Black	12.0%	17.3%	10.2%
Latino/a	4.3%	3.5%	5.4%
Asian	5.3%	4.5%	2.4%
Other	0%	2.0%	1.5%
Parent Marital Status			
Single	17%	21.1%	21.9%
Married	60.2%	58.3%	58.2%
Cohabitating	22.8%	20.6%	19.9%
Parent Education			
Did not complete H.S.	.5%	1.0%	1.5%
H.S. or GED	11.9%	14.0%	16.6%
Some College	35.2%	33.5%	28.8%
College Degree	36.2%	36.5%	41.5%
> College Degree	16.2%	15.0%	11.8%
Parent Employment Status			
Full-time	56.2%	59.0%	63.9%
Part-time	20.0%	20.5%	23.4%
Unemployed	23.8%	20.5%	12.7%
Family Income			
Under $30,000	24.3%	27.0%	24.9%
$30,000 - $49,999	31.9%	15.5%	26.8%
$50,000 – $69,999	20.4%	20.0%	24.4%
$70,000 – $99,999	14.8%	15.5%	16.1%
$100,000 or more	8.6%	12.0%	7.8%
Family Neighborhood			
Urban	27.6%	23.5%	28.3%
Suburban	51.0%	54.0%	53.7%
Rural	21.4%	22.5%	18.0%
Number of Children	1.75 (.92)	1.77 (.89)	1.83 (.90)
Child Age	4.75 (1.34)	9.3 (1.22)	14.42 (1.38)
Child Birth Order			
First Born	27.1%	32.0%	43.4%
Middle Child	7.6%	10.0%	6.3%
Youngest Child	25.7%	19.5%	20.5%
Only Child	39.5%	38.5%	29.8%
Child Gender (% Girls)	47.1%	45%	37.1%

Table 4. *Sample demographic characteristics for stages 3-5 by developmental stage.*

	M (S.D.) or Percentage		
	Young Childhood ***n*** **= 192**	**Middle Childhood** ***n*** **= 177**	**Adolescents** ***n*** **= 195**
Parent Age	31.52 (6.44)	35.49 (6.36)	41.94 (7.70)
Parent (% Mothers)	60.4%	58.8%	63.1%
Parent Race			
White	79.1%	79.1%	78.8%
Black	8.4%	10.2%	10.9%
Latino/a	5.8%	5.1%	6.2%
Asian	6.3%	4.0%	3.1%
Other	.5%	1.7%	1.0%
Parent Marital Status			
Single	16.8%	15.3%	19.1%
Married	61.1%	66.5%	66.5%
Cohabitating	22.1%	18.2%	14.4%
Parent Education			
Did not complete H.S.	1.0%	0.0%	0.0%
H.S. or GED	13.5%	13.0%	11.8%
Some College	29.7%	24.9%	36.4%
College Degree	42.2%	41.2%	38.5%
> College Degree	13.6%	20.9%	13.3%
Parent Employment Status			
Full-time	54.2%	67.8%	63.6%
Part-time	22.4%	15.8%	20.0%
Unemployed	23.4%	16.4%	16.4%
Family Income			
Under $30,000	19.8%	19.8%	25.1%
$30,000 - $49,999	32.8%	29.4%	24.1%
$50,000 – $69,999	20.3%	16.9%	21.1%
$70,000 – $99,999	14.6%	19.8%	16.4%
$100,000 or more	12.5%	14.1%	13.3%
Family Neighborhood			
Urban	26.6%	24.9%	26.7%
Suburban	52.1%	52.0%	50.3%
Rural	21.5%	23.1%	23.0%
Number of Children	1.65 (.81)	2.03 (1.37)	1.73 (.94)
Child Age	4.47 (1.5)	9.46 (1.32)	14.69 (1.39)
Child Birth Order			
First Born	22.9%	41.8%	30.3%
Middle Child	5.2%	9.9%	8.7%
Youngest Child	22.4%	14.7%	29.2%
Only Child	49.5%	33.9%	31.8%
Child Gender (% Girls)	43.2%	47.5%	46.2%

Procedure

All study procedures were approved by the Institutional Review Board (IRB) at the University of Vermont. Parents were consented online before beginning the survey in accordance with the approved IRB procedures. For both the first and second stages, three different studies were listed on MTurk (one for each child age range) and offered $2.00 in compensation. For the sample for the third through fifth stages, three different studies were listed on MTurk (one for each child age range) describing a year-long study involving the completion of five surveys (baseline, 2 week, 4 month, 8 month, and 12 month follow-ups) over the course of 12 months (see Appendix A for recruitment information listed on MTurk). For the third, fourth, and fifth stages, participants were compensated $4.00 for participation in a baseline survey (stage 3), $2.00 for a 2 week follow-up survey (stage 4), $4.00 for a 4 month follow-up (stage 5, wave 3), $4.00 for an 8 month follow-up (stage 5, wave 4), and finally, $8.00 for a 12 month follow-up (stage 5, wave 5). Total possible compensation was $22. For follow-up surveys, participants were contacted using an MTurk ID to complete surveys. One email was sent the day prior to the survey being available, one email was sent the day the survey became available, and two to three emails were sent after that day if they have not yet completed the follow-up survey.

For families with multiple children in the target age range, one child was randomly selected through a computer algorithm and measures were asked in reference to parenting specific to this child and her/his behavior. Participants were recruited from MTurk under the restriction that they were U.S. residents and had at least a 90% task approval rate for their previous Human Intelligence Tasks (HITs). Ten attention check

items were placed throughout the online survey. These questions asked participants to enter a specific response such as "Please select the Almost Never response option" that changed throughout the survey appearing in random order within other survey items. Participants were not included in the study (i.e., their data removed from the dataset) if they had more than one incorrect response to these ten check items to ensure that responses were not random or automated. The follow-up surveys for the stage 3 sample allowed for demographic characteristics to be measured again when participants were recontacted and for inconsistent responders to be excluded from analysis (see Carr, 2014, for an example of this validity check using MTurk). Thus, stage three through five analyses excluded inconsistent responders based on not reporting the same child demographic characteristics as previous waves. We allowed for one-time potential mistakes such as incorrect gender or entering the date-of-birth wrong at a single time-point but excluded participants who made such mistakes at more than one wave (n = 51). This may be an overly strict criterion for inclusion but was seen as a necessarily conservative one in the absence of physical laboratory visits.

Measures

Overview. In stage 1, a demographic questionnaire and parenting items were administered. In stage 2, a demographic questionnaire and the parenting items remaining after stage 1 (see Data Analytic section for details) were administered. In stages 3 and 5, a demographic questionnaire, the parenting items remaining after stage 2 (see Data Analytic section for details) and the child outcome measures were administered. In stage 4, the parenting items used in stages 3 through 5 were re-administered. The same

demographic questionnaire, described below, was administered in stages 1, 2, 3, and 5. The parenting items were drawn from several parenting questionnaires described next. Finally, the child outcome measures are described.

Demographic information. Parents responded to demographic questions about themselves (e.g., parental age, education), their families (e.g., household income), and the target child's demographic information (e.g., gender, age).

Stage 1 parenting measures. Because an exhaustive inclusion of all parenting assessment tools in questionnaire format is beyond the scope of this project, eight exemplar parenting questionnaires were selected for inclusion in the study. The choice of these eight scales was guided by several criteria: (1) freely available; (2) commonly used and cited based on PsycINFO searches of research on parenting published in top psychological journals (e.g., *Child Development*, *Journal of Abnormal Child Psychology*, *Development and Psychopathology*, *Journal of Consulting and Clinical Psychology; Journal of Clinical Child & Adolescent Psychology*); (3) representation of key parenting constructs within the warmth, behavioral control, and hostile behavior domains; (4) a format amenable to being merged into a single measure; and (5) having a parent-report version of the scale that is relatively brief (e.g., not over 100 items). The eight measures are reviewed below and information about each questionnaire (e.g., age range of children, subscales, reliability) from their respective original validation publication are displayed in Table 5. An extensive review of many of these measures and their psychometric properties can be found in Locke and Prinz (2002) and McKee and colleagues (2013).

Table 5. *Parenting questionnaires selected for inclusion in the study.*

Parenting Measures	Scale	Age Range	Subscales	α
Alabama Parenting Questionnaire (APQ)	5-point	Young, Middle & Adolescence	Involvement	.80
			Positive Parenting	.79
			Poor Monitoring	.63
			Inconsistent Discipline	.64
			Corporal Punishment	.45
Parenting Practices Questionnaire (PPQ)	5-point	Young – Middle	Authoritative	.91
			Authoritarian	.86
			Permissive	.76
Parenting Scale (PS)	7-point	Young	Laxness	.83
			Overreactivity	.82
Management of Children's Behavior Scale (MCBS)	3-point	Young, Middle, Adolescence	Inept parenting	.84
Children's Report of Parenting Behavior Inventory (CRPBI)	3-point	Adolescence	Warmth	.84
			Hostility	.78
			Autonomy	.69
			Control	.66
Parent Behavior Inventory (PBI)	6-point	Young	Supportive/engaged	.81
			Hostile/coercive	.83
Parenting Young Children (PARYC)	7-point	Young	Setting Limits	.79
			Supporting Positive Behavior	.78
			Proactive Parenting	.85
Parental Monitoring (PM)	5-point	Middle - Adolescence	Monitoring	.82

Alabama Parenting Questionnaire (APQ; Frick, 1991; Shelton, Frick, & Wootton, 1996). The APQ consists of 35 items (after deleting redundant items), each rated on a 5-point scale from 1 (never) to 5 (always), that yield five parenting constructs: Parental Involvement, Positive Parenting, Poor Monitoring and Supervision, Inconsistent Discipline, and Corporal Punishment. Internal consistencies for the parent report version have been found to range from 0.47 (Corporal Punishment) to 0.81 (Positive Parenting). The largest body of evidence supporting the validity of the APQ is the association between problems in parenting, as documented by scales on the APQ, and conduct

problems in clinic- referred children (e.g., Blader, 2004; Chi & Hinshaw, 2002; Frick et al., 1999; Hinshaw, 2002; Shelton et al., 1996) and adolescents (e.g., Frick et al., 1999; Zlomke, Lamport, Bauman, Garland, & Talbot, 2014), and non-referred children (e.g., Colder, Lochman, & Wells, 1997; Frick, Kimonis, Dandreaux, & Farell, 2003; Oxford, Cavell, & Hughes, 2003; Prevatt, 2003). Overall, good convergent and discriminate validity, as well as concurrent criterion validity have been established (e.g., Dadds, Maujean, & Frasher, 2003; Essau, Sasagawa, & Frick, 2006; Parent et al., 2014; Shelton et al. 1996).

The Parenting Practices Questionnaire (PPQ; Robinson et al., 1995). The PPQ is a 62-item parenting questionnaire. It consists of three global parenting dimensions consistent with Baumrind's (1989) authoritative, authoritarian, and permissive typologies. A total of 133 items were developed using 80 items from Block's (1965) Child-Rearing Practices Report and 53 new items. Parents rate their own behavior on a 5-point scale anchored by 1 (never) to 5 (always) for each item, while thinking about interactions with their target child (e.g., gives child reasons why rules should be obeyed; uses physical punishment as a way of disciplining). The internal factors for the authoritative style are: (1) warmth and involvement; (2) reasoning/induction; (3) democratic participation; and (4) good natured/easy going. The factors for the authoritarian style are: (1) verbal hostility; (2) corporal punishment; (3) non-reasoning, punitive strategies; and (4) directedness. The factors for the permissive style are: (1) follow through; (2) ignoring misbehavior; and (3) self-confidence. Internal consistencies for the parent report version have been found to range from 0.56 (Permissive) to 0.92 (authoritative). The PPQ has

shown satisfactory reliability (for some scales) and validity in previous research (see Locke & Prinz, 2002, for a review).

The Parenting Scale (Arnold et al., 1993). The Parenting Scale is a 30-item measure of parenting behavior that assesses dysfunctional discipline practices when faced with problem situations. Two of the three subscales from the Parenting Scale (PS; Arnold et al. 1993) were used. The Laxness Discipline subscale has 11 items (e.g., "When I say my child can't do something, I let my child do it anyway" and its effective counterpart is "I stick to what I said") and the Overreactivity subscale has 10 items (e.g., "When my child misbehaves I spank, slap, grab, or hit my child most of the time" and its effective counterpart is "never or rarely"). The third subscale, Verbosity, identified in the scale-development sample that never replicated (Rhoades & O'Learly, 2007), has demonstrated poor psychometric properties (e.g., Irvine, Biglan, Smolkowski, & Ary, 1999; Reitman et al., 2001; Steele, Nesbitt-Daly, Daniel, & Forehand, 2005); therefore, this third factor was not included in the current study. Each item is scored on a 1 (e.g., "I use only one reminder or warning") to 7 (e.g., "I give my child several warnings") scale. Given that each item of the PS has unique Likert scale anchors, items were reworded to reflect one end of the Likert scale (rotating between the effective to ineffective ends). See Appendix B for a detailed outline of this process.

The Lax and Overreactivity scales are consistent with the permissive and authoritarian styles of parenting, respectively (Baumrind, 1989). The PS has adequate test-retest reliability, distinguishes clinical from nonclinical samples, and has been validated against behavioral observations of parenting (Arnold et al., 1993; Locke & Prinz, 2002). Overall, the Laxness and Overreactivity subscales of the PS have

substantial reliability and validity data (Locke & Prinz, 2002; Lorber, Xu, Slep, Bulling, & O'Learly, 2014; McKee et al. 2013; Rhoades & O'Leary 2007).

The Management of Children's Behavior Scale (MCBS; Pereppletchikova & Kazdin, 2004). This measure was developed to assess a broad range of areas related to parenting associated with child conduct problems, such as the following: coercive communication; dysfunctional disciplining practices; negative parental attitude; harsh, physical and violent punishment; inconsistent parental control; and negative reinforcement of deviant behaviors; as well as parental praise, approval and support for prosocial behaviors. The measure contains 38 items on a 3-point scale: "Not like me," "Somewhat like me," and "Like me." Higher scores indicate more adverse or inept parenting. The MCBS shows good internal consistency (.84), demonstrates good concurrent, predictive, and incremental validity, and reflects changes among families over the course of BPT treatment (Pereppletchikova & Kazdin, 2004). Overall, the MCBS has demonstrated acceptable, but limited (only one study), reliability and validity data (Hurley et al., 2014).

Children's Report of Parenting Behavior Inventory (CRPBI; Shaefer, 1965). The CRPBI and its short-form revisions have been utilized widely with a range of child and adolescent respondents to examine the associations between parenting behaviors and myriad child outcomes. The CRPBI-30 (Schludermann & Schludermann, 1988) was designed to assess children's perspectives of their parents' parenting behavior through the administration of 30 items. It is the latest iteration of a 260-item scale first published in 1965 (Schaefer, 1965) and is derived from a 108-item version (Schludermann & Schludermann, 1988). Studies analyzing the factor structure of the CRPBI consistently

revealed three major factors—acceptance/rejection, psychological control/autonomy, and firm control/lax control—that hold across parent and child gender. The 30 questions are rated on a 3-point scale, 1 =not like, 2 =somewhat like, and 3 =a lot like. Scales measure parental (a) acceptance vs. rejection, (b) psychological control vs. psychological autonomy, and (c) firm control vs. lax control. The acceptance/rejection subscale describes parental warmth, nurturance, and expression of affection. The psychological control/autonomy scale captures psychological pressure such as guilt-induction, manipulation, and parent-centered rearing behavior. The firm control vs. lax control scale assesses authoritarian parenting (strict discipline and punishment). The psychometric properties have been supportive (Alderfer et al., 2008) and the subscales demonstrated satisfactory internal consistency of $\alpha = .75 – .80$ (e.g., McKernon et al., 2001; Wei & Kendall, 2014).

Although originally developed as a child and adolescent report of parenting, some researchers have adapted the measure to be utilized by parents to assess parent report of parenting. Substantial research supports the reliability and validity of the parent report version (e.g., Fauber, Forehand, Thomas, & Wierson, 1990; Schwarz, Barton-Henry, & Pruzinsky, 1985). Overall, the CRPBI has substantial reliability and validity data (Locke & Prinz, 2002) including the parent report version (McKee et al., 2013).

Parent Behavior Inventory (PBI; Lovejoy et al., 1999). The PBI is a parent report measure assessing two broadband factors of parenting behavior: hostile/coercive and supportive/engaged parenting. The support/engagement dimension corresponds closely to the construct of warmth (Maccoby & Martin, 1983; Schaefer, 1959) and involves parenting behavior which demonstrates the parent's acceptance of the child through

affection, shared activities, and emotional and instrumental support. The hostility/coercion subscale involves parenting behavior which expresses negative affect or indifference toward the child and involves the use of coercion, threat, or physical punishment to influence the child's behavior. The PBI consists of 20 items assessing specific behaviors rated on a 6-point Likert scale ranging from 0 = "not at all true (I do not do this)" to 5 = "very true (I often do this)." Internal consistencies for the PBI has been found to range from 0.65 to 0.87. Adequate reliability and validity for each dimension of the PBI have been demonstrated in prior studies (Lovejoy et al., 1999; Murdock, Lovejoy, & Oddi, 2014; Weis & Lovejoy, 2002; Weis & Toolis, 2010).

Parenting Young Children (PARYC; McEachern et al., 2012) scale. The PARYC is a brief self-report measure designed to assess the frequency in which parents engaged in three types of parenting behaviors over the past month: (1) Supporting Positive Behavior (e.g., "Notice and praise your child's good behavior"), (2) Setting Limits (e.g., "Make sure your child followed the rules you set all or most of the time"), and (3) Proactive Parenting (e.g., "Prepare your child for a challenging situation."). This measure consists of 21 questions rated on a 7-point Likert scale from 1 (not at all) to 7 (most of the time) during the last month. Results from the Family Check-up study (McEachern et al., 2012) provide support for adequate internal consistency and initial validity with the PARYC scales being related to other measures of both adaptive and dysfunctional parenting strategies as well as child problem behavior.

Parental Monitoring (PM; Stattin & Kerr, 2000) scale. The PM is a 9-item scale on which parents report their knowledge of their child's whereabouts, activities, and associations. The items are rated on a 5-point scale ranging from "Not at All" (0) to

"Always" (4). The PM measure has demonstrated acceptable reliability data in prior research as well as good test-retest correlations (Kerr & Stattin, 2000; Stattin & Kerr, 2000).

Modifications to parenting questionnaires. All parenting items went through four steps of adaptations for the current study. First, items across all of the measures above were compiled and converted to a 5-point Likert scale with universal anchors (1 = "Never" to 5 = "Always"). Second, when necessary, item content was adapted to fit the universal Likert scale (e.g., "I am a person who is not very patient with my child" on a 0 "Not like me" to 2 "A lot like me" scale was converted to "I am not very patient with my child" on a 1 "Never" to 5 "Always" scale). Third, items were modified for clarity by the author and a Ph.D. expert in parenting. Lastly, universal instructions were chosen for completing all items and the timeframe for which parenting was reported was set to the past two months. The instructions were as follows: "Parents have different ways of trying to raise their children. Please read each statement and rate how much each one best describes your parenting during the past two months with [*target child's name*]." These instructions and the target child's name were presented above each new section of items on the parent's computer screen (items were split into several pages to reduce the amount of screen scrolling necessary). See Appendix C for the final items administered.

Stages 3 and 5 child problem measures

Internalizing and externalizing psychopathology outcomes were assessed at waves 1 (baseline), 3 (4 month follow-up), 4 (8 month follow-up), and 5 (12 month follow-up).

Child internalizing and externalizing problems. The parent form of the 19-item Brief Problem Monitor (BPM; Achenbach, McConaughy, Ivanova, & Rescorla, 2011)

was used in the current study to measure youth internalizing and externalizing problems. In a study by Chorpita et al. (2010), the BPM internalizing and externalizing items were selected from the CBCL/6-18 and YSR (Achenbach & Rescorla, 2001) using item response theory and factor analysis. The internal consistency and test–retest reliability of the BPM are excellent (Achenbach et al., 2011; Chorpita et al., 2010). Furthermore, validity tests showed large and significant correlations with corresponding scales of the CBCL and YSR as well as with diagnoses obtained from a structured diagnostic interview and distinguishing between referred and nonreferred children (Achenbach et al., 2011; Chorpita et al., 2010). Each item is rated on a 0 to 2 scale (0 = not true, 1 = somewhat true, or 2 = very true). Reliability coefficient omega for internalizing and externalizing problems ranged from .80 to .85 in the current study.

Data Analytic Plan Overview

Analyses for scale development were performed separately by youth development stage: young childhood (3 to 7 years old), middle childhood (8 to 12 years old), and adolescence (13 to 17 years old). The framework for the methods and statistical procedures are derived from recommendations by Brown (2006) and Matsunaga (2010). These recommendations guided the decision to recruit separate samples (because using the same sample capitalizes on chance) for the first three stages of analysis: stage 1, screening items and principal components analysis (PCA); stage 2, exploratory factor analysis (EFA); and stage 3, exploratory structural equation modeling (ESEM). The primary goal of stage 1 is item reduction in order to reduce the item pool to a more manageable size. For this item reduction phase, PCA is an ideal tool because it is

designed for this purpose (i.e., reduce a pool of items into a smaller number of components with as little loss of information as possible). The primary goal of stage 2 is to explore the underlying factor structure of the data, which EFA is ideally suited to do. The primary goal of stage 3 is to construct an explicit model of the factor structure underlying the data and statistically test its fit, which ESEM is ideally suited to do. Finally, the decision to include the 4th (internal and test-retest reliability) and 5th stages (longitudinal analysis of change over time) is based on recommendations of Kazdin (2003) and DeVellis (2012) for developing new measures by establishing reliability and providing initial support for validity. The data analytic strategy for this five stage plan is delineated below and was depicted in Figure 2.

Results

Stage 1 – Reducing item pool

Overview. For stages 1 and 2, parallel analysis (PA) was used to determine the number of factors to retain based on recommendations by Matsunaga (2010). Research suggests PA is the most accurate factor-retention method (e.g., Hayton, Allen, & Scarpello, 2004; Henson & Roberts, 2006). The procedure of PA involves several steps: (1) performing initial EFA or PCA analyses and recording the eigenvalues of extracted factors/components; (2) an artificial dataset is generated which contains the same number of variables with the same number of items as the original data (i.e., parallel data) but all variables included in this dataset are random; (3) the parallel dataset is then factor analyzed and eigenvalues for factors are computed; this is then repeated 1000 times and the averages of those eigenvalues are recorded; and (4) finally, if the eigenvalue of the

original data is greater than the average of the eigenvalues of the parallel factor (i.e., the factor of the same rank extracted from the parallel data), that factor is retained. However, if it is equal to or lower than the average, the factor is considered no more substantial than a random factor and is dropped. The web-based parallel analysis engine by Patil and colleagues (2007), which utilized a SAS-based code written by O'Connor (2000), is used in the current study to perform PA analyses.

Initial steps. First, modifications to the items were made as outlined above. Next, by expert consensus, redundant or repetitive items were deleted. This process included several graduate students identifying potential overlap in item content followed by the review of these items by a doctoral level expert in parenting. After items of very similar content and wording were finalized, the principal investigator and the doctoral level expert in parenting identified the best item within a set of similar items to be retained, or in the case of nearly identical content, an item was chosen at random using a random number generator. The purpose of this step was to limit the total pool of items and to prevent artificial factors emerging in factor analyses due to similarity in item wording and content.

Item reduction. Next, the initial pool of items was administered to the stage 1 sample of 611 parents. All analyses were completed separately by developmental stage. Of the nearly 200 items, the top 100 items with the largest variability within each sample were selected in order to limit potential ceiling and floor effects (e.g., items with a mean score of 4.5 and S.D. of .5 were dropped). Lastly, using promax rotation (oblique rotation which provides solutions with correlated components) and parallel analysis, principal components analysis was used to eliminate items that did not sufficiently load onto any

component (i.e., factor loadings below .40). Items retained after this process for any of the three samples (104 items in total) were then included in the item pool for the second stage for all ages. See Appendix D for a detailed overview of eliminated and retained items.

Stage 2 – Further item trimming and initial factor structure

Overview. Next, the items retained from stage 1 were administered to the stage 2 sample of 615 parents. These items were subjected to exploratory factor analysis methods as recommended by Brown (2006) and Matsunaga (2010) separately by developmental stage. Specifically, parallel analysis was employed to determine the number of factors, after which items with factor loadings below .50 and/or with cross-loadings above .30 were dropped. These stringent criteria (instead of the more common, but still arbitrary, .40 or greater factor loading criterion) were chosen for the purpose of trimming the number of items at this stage in order to ensure that the final measure was relatively brief given the large demand over the last decade in research and practice for short but psychometrically strong measures (Ebesutani et al., 2010). EFA analyses were conducted using maximum likelihood estimation with geomin rotation (oblique rotation which provides solutions with correlated components) in Mplus version 6.1. As recommended by Brown (2006, p. 38), this analysis is an iterative process which was re-run several times with items being dropped each time until all remaining items met the criterion above. Items retained after this process for any of the three samples were then included in the item pool for the third stage for all ages groups.

Initial factor structure. See Table 6 for the final EFA results for each child developmental stage. The number and composition of the final latent factors were further informed by item-level correlations. Appendix E summaries item-level correlations between items in the broadband positive parenting domain and Appendix F summaries item-level correlations between items in the negative parenting domains including the Hostility, Lax Control, and Physical Control domains. Appendices E and F display each item and five levels of possible correlation effect sizes: small (*r*s .10 to .29), medium (*r*s .30 to .49), large (*r*s .50 to .69) and extra-large (*r*s .70 to .99) correlations. Based on EFA results and inspection of the item-level correlations across all three child developmental stages, a **Broadband Positive Parenting** factor emerged constituted by four narrowband subscales: **Proactive Parenting** (e.g., "I tell my child my expectations regarding behavior before my child engages in an activity"; "I avoid struggles with my child by giving clear choices"); **Positive Reinforcement** (e.g., "If I give my child a request and she/he carries out the request, I praise her/him for listening and complying"); **Warmth** (e.g., "I express affection by hugging, kissing, and holding my child"); and **Supportiveness** (e.g., "I show respect for my child's opinions by encouraging him/her to express them"). Also consistent across stages and analyses was a **Physical Control** factor [e.g., "I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked"].

Though inconsistent by developmental stage in EFA analyses, inspection of item level correlations across all three stages supported distinct **Hostility** and **Lax Control** factors. The **Hostility** factor included items representing *intrusive parenting* (e.g., "When I am upset or under stress, I am picky and on my child's back"), *harshness* (e.g., "I yell

or shout when my child misbehaves"), *ineffective discipline* (e.g., "I use threats as punishment with little or no justification"), and *irritability* (e.g., I explode in anger toward my child"). The **Lax Control** factor included items representing *easily coerced* behavior (e.g., "If my child whines or complains when I take away a privilege, I will give it back"), *permissiveness* (e.g., "I am the kind of parent who lets my child do whatever he/she wants"), and *inconsistency* [e.g., "I let my child out of a punishment early (like lift restrictions earlier than I originally said)"].

At this point, items that did not fit within any of the above factors were eliminated. This included items that were highly correlated with items within different factors (e.g., broad positive parenting items that could have fit in several of the narrowband scales) and four firm control items (e.g., "I believe in having a lot of rules and sticking with them") that only emerged in the adolescent EFA model as well as being correlated with items within both control factors across developmental stages. Further, the Lax and Physical Control factors each had a large number of items with similar content. Thus, in order to further reduce the total number of items and reduce item redundancy, items within each of these factors were eliminated based on lower correlations with other items within it's factor.

Table 6. *Exploratory factor analysis results by developmental stage.*

Young Childhood					Middle Childhood				Adolescence				
	Positive	Negative	Lax	Physical		Positive	Negative	Physical		Negative	Positive	Harsh	Firm
MAP_22	0.538	-0.07	-0.124	-0.13	MAP_22	0.595	0.074	-0.029	MAP_22	0.001	0.657	0.011	-0.086
MAP_29	-0.04	0.051	0.591	0.022	MAP_25	-0.251	0.539	0.022	MAP_31	0.588	0	-0.088	-0.041
MAP_31	0.027	0.084	0.63	-0.043	MAP_32	-0.242	0.616	0.002	MAP_43	0.575	-0.031	0.208	-0.01
MAP_34	0.035	0.626	0.107	-0.083	MAP_34	0.063	0.535	0.011	MAP_46	0.615	-0.048	0.013	0.23
MAP_41	-0.139	0.567	0.042	-0.001	MAP_43	-0.06	0.566	0.045	MAP_53	0.083	-0.082	0.646	0.04
MAP_46	-0.029	0.647	0.161	-0.007	MAP_55	0.044	0.73	0.005	MAP_55	0.628	-0.076	0.012	-0.036
MAP_53	-0.189	0.055	0.051	0.493	MAP_57	-0.14	0.178	0.553	MAP_57	0.059	-0.069	0.664	0.177
MAP_54	0.097	0.643	-0.119	0.181	MAP_58	0.691	0.025	0.035	MAP_58	-0.177	0.615	-0.014	0.022
MAP_55	0.01	0.19	0.602	0.021	MAP_60	0.507	0.084	-0.077	MAP_59	0.676	0.193	0.08	-0.047
MAP_57	-0.258	0.04	0.043	0.517	MAP_69	-0.268	0.506	0.072	MAP_74	0.064	-0.127	0.562	-0.012
MAP_58	0.779	-0.002	0.052	-0.046	MAP_85	0.578	0.083	-0.134	MAP_85	-0.076	0.549	-0.177	0.038
MAP_59	0.152	0.25	0.546	-0.055	MAP_90	-0.012	0.099	0.86	MAP_87	-0.11	0.007	-0.012	0.686
MAP_60	0.535	-0.067	-0.041	-0.003	MAP_91	0.704	-0.003	0.08	MAP_90	-0.127	0.038	0.874	0.025
MAP_66	0.558	0.05	-0.289	0.043	MAP_93	0.783	-0.046	-0.028	MAP_97	-0.121	0.499	-0.07	-0.007
MAP_73	0.577	0.095	-0.184	0.067	MAP_97	0.598	-0.033	0.163	MAP_108	-0.016	0.723	-0.069	-0.085
MAP_79	0.648	-0.057	0.036	-0.141	MAP_108	0.71	0.005	-0.199	MAP_109	0.002	0.677	0.059	0.032
MAP_83	-0.03	0.696	0.01	0.074	MAP_109	0.672	0.084	0.033	MAP_115	-0.143	0.085	0.097	0.638
MAP_90	0.048	0.013	-0.17	0.795	MAP_116	0.517	0.055	0.073	MAP_119	-0.041	0.612	0.072	-0.115
MAP_91	0.623	0.057	-0.101	-0.048	MAP_119	0.498	0.009	0.005	MAP_122	0.494	-0.083	0.05	0.056
MAP_97	0.731	-0.076	0.062	-0.068	MAP_123	0.524	-0.097	-0.078	MAP_124	0.711	0.104	0.048	-0.106
MAP_107	-0.039	0.602	0.015	0.127	MAP_131	0.609	0.004	-0.203	MAP_126	-0.041	-0.056	0	0.638
MAP_108	0.709	-0.066	-0.042	-0.037	MAP_133	0.72	0.064	-0.083	MAP_131	0.006	0.639	-0.22	0.091
MAP_109	0.804	0.009	0.041	-0.006	MAP_144	0.583	0.032	0.082	MAP_133	0.031	0.715	0.029	-0.084
MAP_118	0.527	-0.215	0.149	0.036	MAP_153	-0.162	0	0.767	MAP_134	0.55	0.054	-0.017	-0.15
MAP_122	0.016	-0.133	0.768	0.038	MAP_157	0.674	-0.012	0.126	MAP_139	0.672	-0.143	0.01	0.009
MAP_123	0.66	0.213	-0.187	-0.03	MAP_161	0.572	-0.092	0.19	MAP_140	0.045	-0.134	0.729	-0.013
MAP_124	-0.042	0.019	0.714	0.077	MAP_165	0.713	-0.084	0.088	MAP_141	0.697	-0.034	-0.021	0.001
MAP_133	0.691	-0.053	0.03	-0.009	MAP_171	0.497	-0.085	-0.064	MAP_143	0.571	0.012	-0.101	0.283
MAP_134	-0.003	-0.016	0.609	-0.003	MAP_172	0.01	0.598	0.01	MAP_149	0.089	0.076	0.149	0.58
MAP_139	-0.166	0.079	0.547	0.098	MAP_177	0.023	0.191	0.842	MAP_151	0.713	0.002	-0.056	0.179
MAP_140	-0.019	0.154	0.081	0.628	MAP_178	0.523	-0.137	0.087	MAP_153	-0.007	0.024	0.894	0.03
MAP_144	0.635	0.046	0.043	-0.027	MAP_179	0.708	-0.028	-0.081	MAP_157	0.038	0.659	-0.01	0.088
MAP_153	0.024	-0.096	0.029	0.941					MAP_158	0.623	-0.002	0.09	-0.136
MAP_157	0.676	-0.099	-0.016	-0.023					MAP_161	0.038	0.587	0.047	0.181
MAP_158	-0.11	0.039	0.552	0.045					MAP_162	0.474	-0.144	0.024	0.17
MAP_161	0.652	0.074	-0.017	0.122					MAP_165	0.009	0.73	-0.104	0.016
MAP_162	-0.08	0.615	0.135	0.059					MAP_166	0.033	0.6	0.037	0.048
MAP_165	0.775	0.039	0.037	0.05					MAP_169	-0.048	0.594	-0.19	-0.045
MAP_167	0.529	-0.021	-0.266	0.178					MAP_172	0.569	-0.046	0.017	0.021
MAP_169	0.622	-0.016	-0.001	-0.192					MAP_177	-0.037	0.042	0.941	-0.03
MAP_171	0.64	-0.057	0.091	0.117					MAP_178	-0.011	0.534	-0.029	0.076
MAP_176	0.546	0.115	-0.238	0.11					MAP_179	-0.053	0.712	0.003	0.026
MAP_177	-0.063	0.012	-0.023	0.851									
MAP_178	0.722	0.047	0.001	-0.029									
MAP_179	0.631	-0.082	-0.061	-0.018									

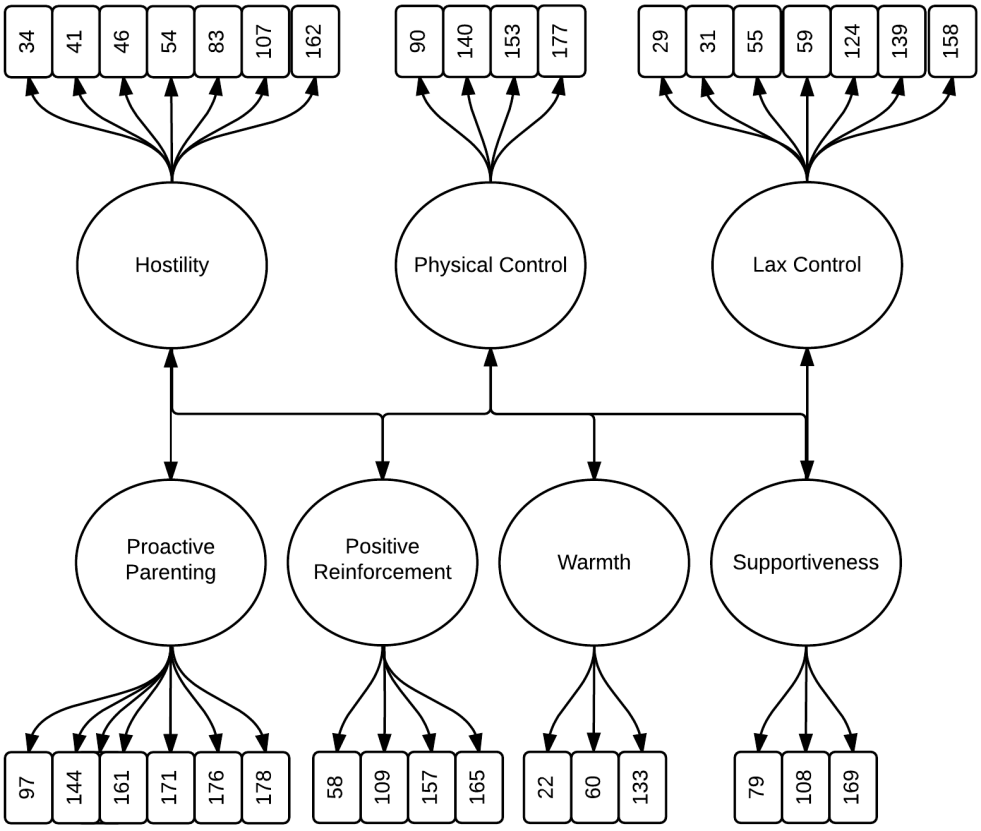
Stage 3 – Final factor structure

Overview. Next, the items retained from stage 2 were administered to the stage 3 sample of 564 parents. An ESEM approach was utilized to confirm and test the factor structure derived from stage 2. ESEM is an overarching integration of the best aspects of

confirmatory factor analysis (CFA), structural equation modeling (SEM), and traditional EFA (see Marsh, Morin, Parker, & Kaur, 2014, for a review). Further, ESEM is preferable over traditional CFA approaches because CFAs typically produce inflated factor correlations compared to ESEMs due to misfit associated with overly restrictive measurement models with no crossloadings (Marsh et al., 2014). ESEM allowed for the estimation of the proposed factor structure in the total sample (N = 564) followed by multiple-groups models testing measurement invariance across the three child developmental stages.

ESEM analyses were conducted using Mplus 7.1 software (Muthen & Muthen, 2012) and maximum likelihood estimation with robust standard errors (MLR) to adequately account for non-normality. The use of the MLR estimator required the use of a scaled chi-square difference test (Satorra, 2000) for making key comparisons among nested models. First a CFA model (see Figure 3) was estimated followed by an ESEM model (similar to Figure 3 but allowing for all cross-loadings). Per recommendations by Marsh and colleagues (2014), the ESEM model used target oblique rotation specifying target loading values near zero for items not within a given subscale. The following fit statistics were employed to evaluate model fit: Chi-square ($\chi 2$: $p > .05$ excellent), Comparative Fit Index (CFI; > .95 excellent), Root Mean Square Error of Approximation (RMSEA; < .05 excellent) and the Standardized Root Mean Square Residual (SRMR; < .05 excellent) (Browne & Cudeck, 1993; Hu & Bentler, 1999). Full information maximum likelihood estimation techniques were used for inclusion of all available data.

Figure 3. *CFA factor structure with items as indicators.*



Final factor structure. The CFA model depicted in Figure 3 demonstrated acceptable fit, χ^2 (506, N = 564) = 1066, p < .01, RMSEA = .044, 95% CI .041 - .048, CFI = .92, SRMR = .06. The ESEM model demonstrated excellent fit, χ^2 (344, N = 564) = 523, p < .01, RMSEA = .03, 95% CI .025 - .036, CFI = .97, SRMR = .02. As expected, the improvement in fit from the CFA to ESEM model was significant, $\Delta\chi^2$ (164) = 524, p < .01. Complete results of the ESEM model are presented in Table 7.

The Proactive Parenting item loadings were all significant and ranged from .50 to .65. All but three items (165, 46, and 124) not on the Proactive Parenting subscale had near zero and nonsignificant cross-loadings. The three items that had significant cross-loadings were all below .25. The Positive Reinforcement item loadings were all significant and ranged from .40 to .86. All but four items (161, 108, 46, and 162) not on

the Positive Reinforcement subscale had near zero and nonsignificant cross-loadings. The four items that had significant cross-loadings were all below .25. The Warmth item loadings were all significant and ranged from .60 to .96. All of the items not on the Warmth subscale had near zero and nonsignificant cross-loadings. The Supportiveness item loadings were all significant and ranged from .51 to .80. All but four items (165, 31, 55, and 139) not on the Supportiveness subscale had near zero and nonsignificant cross-loadings. The four items that had significant cross-loadings were all below .25.

The Hostility item loadings were all significant and ranged from .35 to .78. Eight items (171, 133, 79, 140, 31, 55, 59, and 139) not on the Hostility subscale had significant cross loadings but all were .25 or less. The Lax Control item loadings were all significant and ranged from .50 to .72. Nine items (176, 157, 79, 108, 41, 45, 54, 107, and 162) not on the Lax Parenting subscale had significant cross loadings. Seven of these items had cross-loadings below .25. Of particular note, two of the cross-loading items, which were from the Hostility subscale, had loadings between .27 and .32. The Physical Control item loadings were all significant and ranged from .70 to .90. All but six items (97, 176, 109, 79, 34, and 54) not on the Physical Control subscale had near zero and nonsignificant cross-loadings. The six items that had significant cross-loadings were all below .25.

All four positive parenting subscales were significantly and positively correlated with each other (*r*s ranging from .36 to .59). Hostility was significantly and negatively correlated with all four positive parenting subscales (*r*s ranging from -.13 to -.27) and positively correlated with Lax Control ($r = .40$, $p < .05$) and Physical Control ($r = .36$, $p < .05$). Lax Control was significantly and negatively correlated with all positive parenting

subscales (*r*s ranging from .16 to .25) except Warmth and had a small positive correlation with Physical Control ($r = .11$, $p < .05$). Lastly, Physical Control was negatively correlated with Supportiveness ($r = -.24$, $p < .05$) but none of the other positive parenting subscales.

Table 7. *Standardized factor loadings for the ESEM model.*

	PP	PR	WM	SP	HS	PC	LC
Item 97	**.59***	.12	.03	-.05	-.04	-.08*	.02
Item 144	**.58***	.14	-.02	-.06	.05	.01	-.01
Item 161	**.61***	.17*	.02	-.10	.03	.02	.01
Item 171	**.50***	-.08	.02	.10	-.17*	-.01	.01
Item 176	**.65***	-.05	.03	.05	.07	.08*	-.14*
Item 178	**.57***	.03	.04	.11	-.04	.02	-.03
Item 58	.13	**.40***	.09	.14	.02	-.01	.03
Item 109	.07	**.67***	-.01	.14	-.01	-.08*	-.01
Item 157	.05	**.86***	.08	-.12	-.07	.02	.11*
Item 165	.18*	**.44***	.01	.24*	.03	.01	-.05
Item 22	.01	.03	**.80***	-.06	-.01	.03	.01
Item 60	.07	-.08	**.60***	-.11	-.05	.01	.02
Item 133	-.04	.03	**.96***	-.02	.07*	-.01	-.03
Item 79	.06	.04	.06	**.52***	-.10*	-.14*	.09*
Item 108	.06	.23*	.05	**.51***	.05	-.02	-.12*
Item 169	-.01	.03	.03	**.80***	-.07	.05	.04
Item 34	-.03	-.04	.01	.07	**.68***	-.11*	-.02
Item 41	-.05	-.01	-.02	-.04	**.35***	.10*	.32*
Item 46	.18*	-.19*	.02	-.12	**.46***	-.01	.27*
Item 54	-.03	.09	.01	.07	**.77***	.12*	-.13*
Item 83	-.07	.04	.01	-.06	**.72***	.02	-.03
Item 107	-.07	.11	-.04	-.05	**.79***	.03	-.08*
Item 162	.08	-.15*	.02	-.02	**.62***	-.06	.12*
Item 90	.01	-.05	.03	.03	-.05	**.90***	.01
Item 140	.01	-.02	-.01	-.03	.13*	**.70***	.07
Item 153	.03	.02	.02	.01	.01	**.90***	-.06
Item 177	-.01	.02	.03	-.02	-.05	**.86***	.03
Item 29	-.07	.07	.04	-.01	-.07	.02	**.70***
Item 31	.04	-.03	-.05	-.12*	-.11*	.02	**.63***
Item 55	.09	-.04	-.06	.11*	.20*	.02	**.68***
Item 59	.11	-.05	-.04	.09	.11*	-.01	**.59***
Item 124	-.15*	.07	.01	.06	.01	-.04	**.73***
Item 139	-.10	-.02	-.01	-.12*	.16*	.04	**.50***
Item 158	-.10	.08	.04	-.03	-.02	.03	**.72***

Note: PP = Proactive Parenting; PR = Positive Reinforcement; WM = Warmth; CR = Supportiveness; RP = Hostility; PC = Physical Control; LD = Lax Control. Bold = primary subscale items; * = $p < .05$.

Measurement invariance across child developmental stages. A multiple-group ESEM was employed to examine and test whether measurement invariance across the three developmental stages was supported. It was hypothesized that the measurement of parenting would not be equivalent across the three developmental stages. Three different forms of measurement invariance were tested: configural (i.e., same number of factors and the same set of near-zero factor loadings in all groups), metric (configural plus factor loadings are held equal across groups), and scalar (metric plus factor loadings and intercepts/thresholds are held equal across groups). Contrary to hypotheses, chi-square difference tests between the configural, metric, and scalar models were all nonsignificant (all *p*s > .20), supporting strong measurement invariance of parenting across the three development stages.

Hierarchical factor structure. In order to examine hierarchical factor structure and test if a broadband positive and negative parenting (similar to ASEBA's broadband internalizing and externalizing problems) was supported, a method called ESEM within CFA (EwC) was used. This methodology circumvented ESEMs inability to support such models (Marsh et al., 2014). In the EwC model all parameter estimates from the final ESEM solution were fixed to values based on results from the final ESEM model. The EwC model specified one broadband Positive Parenting factor with Proactive Parenting, Positive Reinforcement, Warmth, and Supportiveness as narrowband subscale indicators and separate factors for Hostility, Lax Control, and Physical Control. A second EwC model added the latter three subscales as sub factors as part of a broadband negative parenting factor in order to ascertain if Hostility and the two behavioral control factors could be combined underneath one higher-order factor.

The first EwC model demonstrated excellent fit, χ^2 (544, N = 564) = 538.4, p = .56, RMSEA = .00, 95% CI .000 - .013, CFI = 1.0, SRMR = .03. Proactive Parenting (.75), Positive Reinforcement (.77), Warmth (.56), and Supportiveness (.69) all had significant factor loadings onto the **Broadband Positive Parenting** factor. Broadband Positive Parenting was negatively correlated with Hostility, r = -.24, p < .001, and Lax Control, r = -.27, p < .001, but only marginally correlated with Physical Control, r = -.10, p < .10. The addition of a Broadband Negative Parenting factor also demonstrated good fit but factor loadings of Lax Control (.39) and Physical Control(.46) compared to Hostility (.88) were unsupportive of a unified Broadband Negative Parenting factor. Thus, a Broadband Positive Parenting, but not Negative Parenting, factor was supported.

Bifactor ESEM. Lastly, an alternative data analytic method to EwC, bifactor ESEM (see Morin, Arens, & Mash, 2015, for a review), was used to provide further support for a Broadband Positive Parenting factor. The bifactor ESEM model is a type of hierarchical factor structure that assumes a secondary general factor and, unlike higher-order factor models, bifactor models do not require that specific factors are nested under higher factors. A bifactor structure was estimated such that, in addition to the seven specific narrowband subscales, a global Broadband Positive Parenting factor was modeled using target oblique rotation specifying target loading values near zero for Hostility, Lax Control, and Physical Control items.

The bifactor ESEM model demonstrated excellent fit, χ^2 (317, N = 564) = 435, p < .01, RMSEA = .026, 95% CI .019 - .031, CFI = .98, SRMR = .018. The improvement in fit from the ESEM to bifactor ESEM model was significant, $\Delta\chi^2$ (27) = 83.2, p < .01. Factor loadings for the Broadband Positive Parenting factor from the four narrowband

subscales were all significant and ranged from .43 to 1.04 (mean = .58). Factor loadings within each narrowband factor remained significant and above .30. Consistent with the EwC hierarchical model, Broadband Positive Parenting was negatively correlated with Hostility, $r = -.24$, $p < .01$, and Lax Control, $r = -.33$, $p < .01$, but not significantly negatively correlated with Physical Control, $r = -.07$, $p > .10$. In sum, a Broadband Positive Parenting scale and four narrowband scales were supported across two methods (EwC and bifactor ESEM) and three models (two EwC and one bifactor ESEM).

Stage 4 – Internal and test-retest reliability

Internal consistency. Coefficient omega, a preferable index of internal consistency over alpha (e.g., less risk of overestimation or underestimation of reliability, more realistic assumptions; see Dunn, Baguley, & Brunsden, 2014, for a review), was calculated for each of the seven subscales and Broadband Positive Parenting at baseline. Coefficient omega was calculated using the MBESS package (Kelley & Lai, 2012) in R (R Development Core Team, 2012) and used bootstrapping to obtain 95% confidence intervals. For comparison purposes, alpha coefficients were also calculated. Reliability was excellent for Proactive Parenting (Ω = .81 [.78 to .84], α = .80), Positive Reinforcement (Ω = .83 [.80 to .86], α = .83), Warmth (Ω = .84 [.81 to .86], α = .83), Hostility (Ω = .84 [.82 to .87], α = .85), Lax Control (Ω = .85 [.82 to .88], α = .85), and Physical Control (Ω = .91 [.89 to .93], α = .91). Reliability was marginal for Supportiveness, Ω = .77 [.72 to .80], α = .77, but strong for Broadband Positive Parenting, Ω = .90 [.88 to .91], α = .90.

Test-retest reliability. The sample from stage 3 was reassessed two weeks after baseline (80.7% retention) to ascertain test-retest reliability. Longitudinal test-retest ESEM was utilized to examine correlations between narrowband factors across the baseline and two-week time points. Two sets of ESEM factors, one for baseline and one for the two-week follow-up, were delineated allowing for correlated uniqueness between the same items across time-points (e.g., item 22 at baseline with item 22 at the two-week follow-up). The test-retest ESEM demonstrated excellent fit, χ^2 (1762, N = 564) = 2437.2, $p < .01$, RMSEA = .026, 95% CI .024 - .029, CFI = .96, SRMR = .025. Consistent with the baseline-only ESEM model, item loadings within each subscale at baseline and two-weeks were all significant and ranged from .35 to .96 at baseline and .35 to .94 at two-weeks with similar cross-loading patterns as reported above. Two-week test-retest reliability was strong for all subscales as indexed by high between time-point correlations for Proactive Parenting, $r = .88$, $p < .001$, Positive Reinforcement, $r = .84$, $p < .001$, Warmth, $r = .90$, $p < .001$, Supportiveness, $r = .81$, $p < .001$, Hostility, $r = .91$, $p < .001$, Lax Control, $r = .91$, $p < .001$, and Physical Control, $r = .91$, $p < .001$.

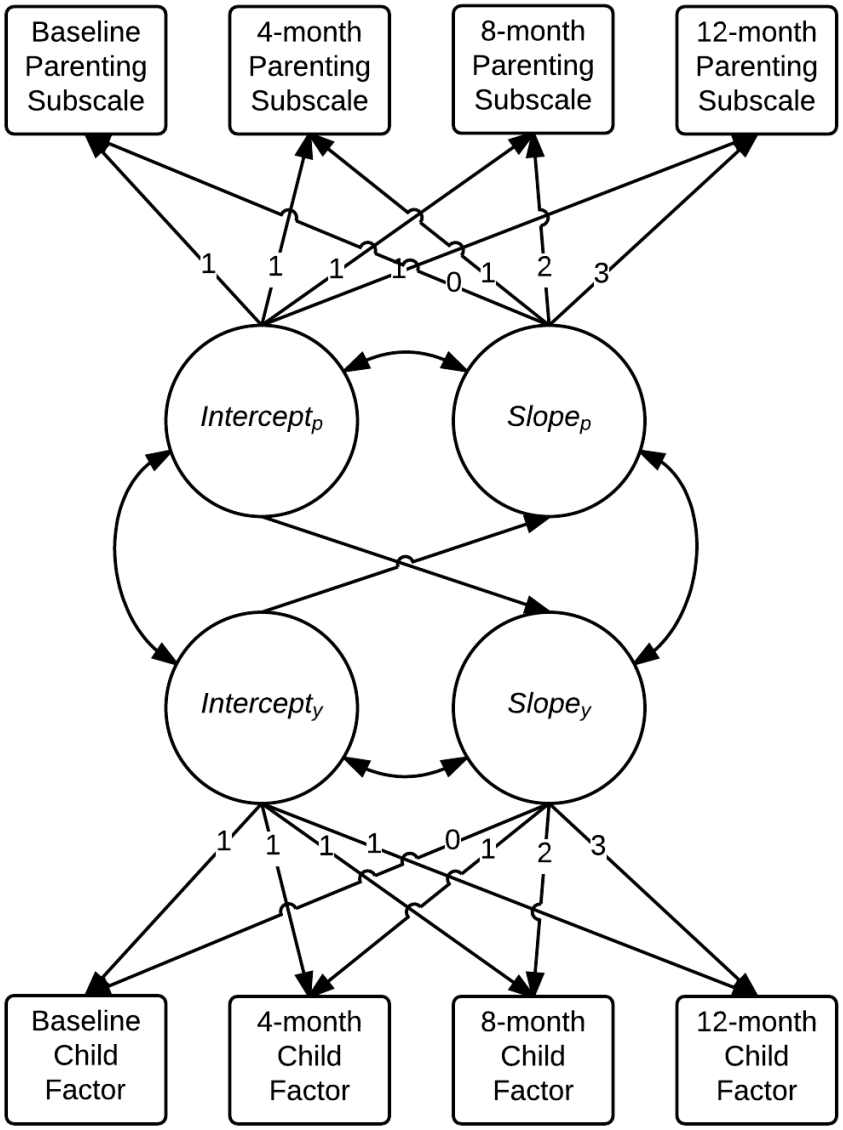
Stage 5 – Change over time and assessing validity

Overview. As an extension of the structural equation modeling (SEM) framework employed for stages 2-4, latent curve modeling (LCM) was utilized, as implemented by Mplus, for stage 5 analyses. Latent growth curve models are multilevel models that estimate the changes within persons as slopes and intercepts and, at the same time, summarize the between-individual differences in these person-level slopes and intercepts (Little, 2013). Specifically, a parallel process (Preacher, Wichman, MacCallum, &

Briggs, 2008) LCM was used because it allows for both level (intercept) and change (slope) in one variable (parenting subscale) to be used to predict level and change in other variables (child psychosocial adjustment). Unconditional models for each parenting subscale and each child outcome were examined prior to testing parallel process models. Criterion for a good model was the same as outlined in stage 3. Full information maximum likelihood estimation techniques were used for inclusion of all available data. A model for each parenting subscale and child factor pairing was run.

Figure 4 displays the proposed parallel process latent growth curve model and is based on a LCM with a single parenting subscale and a child outcome. The loading of all repeated assessments is constrained to "1" to specify the latent intercept, and the latent linear slope loadings are constrained to the time of assessment. The intercept and slope for parenting and child factors are modeled simultaneously. The proposed model assumes simple linear change over time but when good fit was not obtained, alternative forms were examined. The proposed model allows for testing of several questions: First, are mean levels of the starting point of parenting ($intercept_p$) correlated with mean levels of child factors ($intercept_y$)?; second, is change in parenting ($slope_p$) correlated with change in child factors ($slope_y$)?; third, do mean levels of parenting at baseline ($intercept_p$) predict change in child factors ($slope_y$)?; and fourth, do mean levels at baseline of child factors ($intercept_y$) predict change in parenting practices ($slope_p$)?

Figure 4. *The proposed parallel process growth curve model.*



Unconditional parenting LCMs. See Table 8 for fit statistics and results of all final unconditional LCM models. The unconditional LCM with linear slope for Positive Reinforcement, Warmth, Hostility, and Lax Control demonstrated excellent fit. As fit with a linear slope was marginal for Proactive Parenting, Supportiveness, and Physical Control, free-loading LCMs were used instead such that the last time-point was freely estimated. In all cases the free-loading model provided superior fit when compared to

linear slope models, all $\Delta \chi^2$ *p*s < .01. Across all parenting subscales the covariance of intercept and slope factors were significant and negative suggesting that parents who have lower scores at baseline tend to increase more rapidly across 12-months for each of the parenting subscales. The variances of intercept and slope factors for all parenting subscales significantly differed from zero, indicating potentially important individual variability in both starting-point and change overtime

Unconditional child behavior LCMs. See Table 8 for fit statistics and results of all final unconditional LCM models. The unconditional LCM with linear slope for internalizing problems demonstrated excellent fit. Fit for the externalizing problems model with a linear slope was excellent but the correlation between intercept and linear slope was greater than one, causing not positive definite problems; therefore, an intercept-only model was used. The intercept-only model resolved the not positive definite issue and provided equivalent fit when compared to the linear slope model, $\Delta \chi^2$ (3) = 2.2, $p > .10$. The intercept-only externalizing LCM implies between-person variability in overall level of externalizing problems, but externalizing problems does not change with time. The covariance of intercept and slope factors for internalizing problems was not significant. The variance of intercept for internalizing and externalizing problems was significant, indicating potentially important individual variability in the starting point in these factors. The variance of slope for internalizing problems was not significant, suggesting limited variability in change overtime.

Table 8. *Unconditional LCM results.*

	χ^2 (df)	RSMEA [95% CI]	CFI	SRMR	Int-Slp	Intercept Variance	Slope Variance
Parenting							
PP – Free-load	6.1 (4)	.03 [.00 - .76]	1.0	.018	-.05**	.77*	.04*
PR – Linear	16.9 (5)	.07 [.02 - .10]	.99	.010	-.03**	.73*	.02*
WM – Linear	13.5 (5)	.06 [.02 - .09]	.99	.006	-.02**	.85*	.01*
SP – Free-load	.52 (4)	.00 [.00 - .00]	1.0	.004	-.07**	.80*	.05*
HS – Linear	2.2 (5)	.00 [.00 - .04]	1.0	.009	-.03**	.83*	.02*
LC – Linear	2.5 (5)	.00 [.00 - .04]	1.0	.012	-.01*	.80*	.01*
PC – Free-load	7.1 (4)	.04 [.00 - .08]	1.0	.022	-.05**	.88*	.03*
Child Factors							
INT – Linear	10.3 (5)	.04 [.00 - .08]	.99	.029	.16	2.7**	.07
EXT – Intercept	5.3 (8)	.00 [.00 - .04]	1.0	.027	--	4.4**	--

Note: PP = Proactive Parenting; PR = Positive Reinforcement; WM = Warmth; SP = Supportiveness; HS = Hostility; PC = Physical Control; LC = Lax Control; INT = Internalizing Problems; EXT = Externalizing Problems. Bold = primary subscale items; * = $p < .05$.

Parenting-child behavior LCMs. See Table 9 for fit statistics for all models and Table 10 for a summary of the results. Model fit across all models was excellent. The questions delineated on page 58 were addressed first for child internalizing problems and then for child externalizing problems.

For child internalizing problems, correlations between the internalizing intercept and parenting subscale intercepts were all significant except for Physical Control. Thus, at baseline, higher levels of Proactive Parenting, Positive Reinforcement, Warmth, and Supportiveness and lower levels of Hostility and Lax Control were related to lower levels of child internalizing problems. Second, change in only Hostility ($slope_p$) was significantly correlated with change in child internalizing problems ($slope_y$): As Hostility increased linearly over time, child internalizing problems increased. Third, not surprisingly due to the non-significant variance in child internalizing problems slope, mean levels of parenting at baseline did not predict change in these problems. Lastly,

lower levels at baseline of child internalizing problems ($intercept_y$) predicted increases in Positive Reinforcement, Warmth, and Supportiveness over time ($slope_p$).

For child externalizing problems, correlations between parenting subscale intercepts and the intercept of this problem behavior were significant for all subscales. Given that the externalizing LCM did not include a slope factor, significant correlations between intercepts can be interpreted as follows: Higher baseline levels of Proactive Parenting, Positive Reinforcement, Warmth, and Supportiveness and lower baseline levels of Hostility, Lax Control, and Physical Control were associated with lower mean levels of externalizing problems across all four assessment points. Lack of change over time in externalizing problems precluded examining if parenting predicted change in these child problems. Lastly, lower mean levels of child externalizing problems ($intercept_b$) predicted increases in three parenting subscales over time: Positive Reinforcement, Warmth, and Supportiveness.

Table 9. *Model fit for parallel process LCMs.*

	Internalizing Problems				Externalizing Problems			
	χ^2 (df)	RSMEA [95% CI]	CFI	SRMR	χ^2 (df)	RSMEA [95% CI]	CFI	SRMR
Proactive Parenting	51.4 (21)	.051 [.03 - .07]	.99	.03	37.8 (26)	.028 [.00 - .05]	1.0	.03
Positive Reinforcement	45.0 (22)	.043 [.03 - .06]	.99	.02	35.7 (27)	.024 [.00 - .04]	1.0	.02
Warmth	49.3 (22)	.047 [.03 - .07]	.99	.03	42.9 (27)	.032 [.01 - .05]	.99	.02
Supportiveness	30.5 (21)	.028 [.00 - .05]	1.0	.02	25.3 (26)	.00 [.00 - .03]	1.0	.02
Hostility	50.9 (22)	.048 [.03 - .07]	.99	.03	60.6 (27)	.047 [.03 - .06]	.98	.02
Lax Control	40.8 (22)	.039 [.02 - .06]	.99	.03	39.8 (27)	.029 [.00 - .05]	.99	.03
Physical Control	46.1 (21)	.046 [.03 - .06]	.99	.02	4.3 (26)	.033 [.01 - .05]	.99	.03

Table 10. *Parallel LCM results.*

	Internalizing Problems Standardized Coefficient (Standard Error)				Externalizing Problems Standardized Coefficient (Standard Error)			
	Pint ↔ Yint	Pslp ↔ Yslp	Pint → Yslp	Yint → Pslp	Pint ↔ Pint	Pslp ↔ Pslp	Pint → Yslp	Yint → Pslp
Proactive Parenting	**-.17 (.05)****	-.09 (.12)	.09 (.13)	-.10 (.07)	**-.14 (.05)****	--	--	-.09 (.06)
Positive Reinforcement	**-.13 (.05)***	.05 (.17)	.02 (.12)	**-.17 (.07)***	**-.10 (.05)***	--	--	**-.23 (.07)****
Warmth	**-.25 (.05)****	-.17 (.13)	.10 (.12)	**-.16 (.07)***	**-.22 (.05)****	--	--	**-.15 (.07)***
Supportiveness	**-.14 (.05)****	.02 (.11)	.01 (.13)	**-.11 (.07) †**	**-.33 (.05)****	--	--	-.01 (.06)
Hostility	**.45 (.05)****	**.40 (.16)***	.01 (.12)	-.08 (.06)	**.57 (.03)****	--	--	-.03 (.06)
Lax Control	**.28 (.06)****	.42 (.29)	-.16 (.12)	.03 (.11)	**.26 (.06)****	--	--	.01 (.12)
Physical Control	.04 (.06)	.15 (.15)	.11 (.13)	.02 (.07)	**.33 (.05)****	--	--	.01 (.07)

Note: N = 546. Int = intercept; Slp = slope; Yslp = youth problem behavior slope; Pslp = parenting slope; ↔ = covariance; → = regression; † $p \leq .10$ * $p < .05$ ** $p < .01$.

Discussion

Assessment is a fundamental element in scientific research and the interpretation of parenting studies depends primarily on the confidence one can place on assessment methods used. Unfortunately, the strength of psychometric properties of the most commonly used method of assessing parenting, questionnaires, has been described as "dismal" (Hurley et al., 2014, p. 820) as few measures comprehensively assess both positive and negative domains of parenting and even fewer assess parenting across the developmental span from young childhood through adolescence. The primary aim of the current study was to create a new multidimensional measure of parenting practices, constituted by items from already established measures, that overcomes the issues delineated above in order to advance the measurement of parenting practices in clinical and research settings. The current study utilized 1,790 parents across five stages of analysis designed to (a) select only the best parenting items, (b) establish a factor structure consisting of positive and negative dimensions of parenting, (c) meaningfully consider child development stage, (d) ensure strong psychometric properties, and (e) provide initial evidence for the validity of the final measure. Through this five stage empirical approach, the **Multidimensional Assessment of Parenting Scale (MAPS)** was developed, successfully achieving all aims. Appendix G shows the final MAPS to be used in future research and Appendix H shows MAPS scoring. As shown in Appendix I, the average grade level (based on the USA education system) for the final MAPS items was 6.6.

Stage 1 of the MAPS development achieved the first aim through retaining items with meaningful variability and removing poorly performing items. Stages 2 and 3 of the

MAPS development resulted in a factor structure that included both positive and negative dimensions of parenting practices that were appropriate for parents of children across the developmental span. The MAPS final factor structure included seven narrowband domains of parenting practices and one broadband domain. The **Broadband Positive Parenting** factor includes four narrowband subscales: **Proactive Parenting** which measures child-centered appropriate responding to anticipated difficulties (e.g., "I tell my child my expectations regarding behavior before my child engages in an activity"; "I avoid struggles with my child by giving clear choices"); **Positive Reinforcement** which measures contingent responses to positive child behavior with praise, rewards, or displays of approval (e.g., "If I give my child a request and she/he carries out the request, I praise her/him for listening and complying"); **Warmth** which measures displays of affection (e.g., "I express affection by hugging, kissing, and holding my child"); and **Supportiveness** which measures displayed interest in the child, encouragement of positive communication, and openness and receptivity to a child's ideas and opinions (e.g., "I show respect for my child's opinions by encouraging him/her to express them").

In contrast to positive parenting and incongruent with study hypotheses, a **Broadband Negative Parenting** domain was *not* supported; instead three separate narrowband domains emerged: Hostility, Lax Control, and Physical Control. The narrowband **Hostility** subscale includes items representing *intrusive parenting* which is overcontrolling and parent-centered (e.g., "When I am upset or under stress, I am picky and on my child's back"), *harshness* which includes coercive processes such as arguing, threats, and yelling (e.g., "I yell or shout when my child misbehaves"), *ineffective discipline* (e.g., "I use threats as punishment with little or no justification"), and

irritability (e.g., I explode in anger toward my child"). The narrowband **Lax Control** subscale includes items representing *permissiveness* or the absence of control (e.g., "I am the kind of parent who lets my child do whatever he/she wants"), *easily coerced control* in which the parent backs down from control attempts based on the child's behavior (e.g., "If my child whines or complains when I take away a privilege, I will give it back"), and *inconsistency* which is the failure to follow through with control or inconsistently applying consequences [e.g., "I let my child out of a punishment early (like lift restrictions earlier than I originally said)"]. The Lax Control subscale can be conceptualizations as a continuum such that higher levels represent lax control and lower level represents firm control. And lastly, the narrowband **Physical Control** subscale includes items represented physical discipline both in general (e.g., "I spank my child with my hand when he/she has done something wrong") and specifically out of anger (e.g., "I spank my child when I am extremely angry") and frustration [e.g., "I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked"].

Stages 1 through 3 were all conducted separately by child developmental stage (i.e., young childhood, middle childhood, and adolescence) in order to meaningfully consider stage throughout the development of the MAPS. Contrary to hypotheses, full measurement invariance of the final factor structure of the MAPS was supported in ESEM analyses. Although unexpected, this outcome is in hindsight not as perplexing as it initially sounds as well as being advantageous for future research. First, ad hoc examination of the final items reveals wording that captures the specific underlying domain while also being sufficiently broadly worded to apply to children in differing

developmental stages. For example, for item 4 (see Appendix G), "I argue with my child" can look very different depending on the age of the child but the simple wording of this item allows it to equally apply to a parent who has frequent arguments with her or his child regardless of that child's developmental stage. This example is representative of a majority of items such as "warm and intimate times" (item 7), "I encourage my child to talk about her/his troubles" (item 17), "I give in to my child when she/he causes a commotion" (item 27), and "I avoid struggles with my child by giving clear choices" (item 33). Some items in particular were not expected to be viable across child developmental stages. One such example is "My child and I hug and/or kiss each other" (item 21). Yet, this item and others like it do not include the context in which the behavior is occurring. Although this behavior is common across contexts for parents of young children, parents of teenagers quickly learn that displays of affection in the drop-off before school is not acceptable; as a consequence, it is often reserved for other contexts that are more private such as in the home. Yet, parents of both young children and teenagers can endorse this item.

Measurement invariance analyses tested whether the underlying factor structure of parenting is the same for different child developmental stages; a test that has largely been ignored in parenting and clinical research. Without measurement invariance of mean differences, comparisons of parenting domains across developmental stages are potentially invalid (Marsh et al., 2014). Furthermore, measurement invariance is "fundamental to the evaluation of construct validity and is an important prerequisite to any valid form of group-based comparison" (Marsh et al., 2014, p .93). Therefore, the finding that the factor structure of the MAPS is supportive of measurement invariance

across child developmental stages is advantageous for future research. For example, the MAPS can support efforts at developmental mapping of parenting across child development and meaningfully testing hypotheses of change and continuity in parenting practices as they relate to child outcomes over the course of child development. Additionally, for intervention research, the MAPS can be used to examine if specific parenting domains change as a function of intervention for programs with parents of young children through adolescence or intervention research can include long-term follow-ups and use the same measure of parenting as children move across stages. Indeed, although unexpected, measurement invariance of the MAPS factor structure across child developmental stages is a clear strength of the final measure. Of particular importance, the MAPS is the first to examine measurement invariance of parenting practices across these three child developmental stages.

The aim of Stage 4 of the MAPS development was to establish the reliability properties of the measure, which was a particular weakness of previous measures (Hurley et al., 2014; Stanger et al., 2016). All but one of the narrowband subscales demonstrated strong internal reliability as evidenced by omega and alpha coefficients of .80 and above. This is particularly impressive given the relatively small number of items per subscale. And, for negative parenting domains such as Physical Control, which have traditionally had very low reliability estimates (often below .60 for other common measures such as the APQ), it is even more impressive. The only potentially problematic subscale in regard to reliability was the Supportiveness subscale, which was marginal at .77. It is important to note that with only three items, this is not surprising and still above the generally considered minimally acceptable level of reliability (.70). The promising note is that

internal consistency of the Broadband Positive Parenting scale, which included Supportiveness as well as Warmth, Proactive Parenting, and Positive Reinforcement, was excellent (.90). Lastly, two-week test-retest reliability for all MAPS domains was strong with all longitudinal ESEM derived correlation coefficients above .80 and four of seven coefficients at .90 and above. In sum, internal consistency and test-retest reliability provide strong support for the reliability of the MAPS.

Stage 5 of the MAPS development provided initial evidence for the validity of the MAPS scales. The intercepts of the MAPS subscales and child problem behaviors were significantly related (except for Physical Control and child internalizing problems). The direction of effects was consistent with a large body of research, using both questionnaires and observations, linking domains of warmth, hostility, and behavioral control to child problem behaviors (see Cummings et al., 2000; Granic & Patterson, 2006; Hoeve et al., 2009; Rapee, 2012, for reviews).

In regard to longitudinal analyses, neither child internalizing nor externalizing problems evidenced meaningful variability or change over the 12 months, substantially limiting, or in the case of externalizing problems precluding, examination of MAPS subscales as predictors of change in child problem behaviors. However, it had also been predicted that child behavior at baseline would predict change in parenting over time. As unconditional LCMs of each MAPS subscale showed meaningful variance in both initial mean levels and change over the course of 12 months, this hypothesis could be examined. Some support was found as child problem behaviors (internalizing and externalizing) predicted changes in domains of warmth and control of the MAPS such that higher initial levels of these child problem behaviors predicted decreases in Warmth and Positive

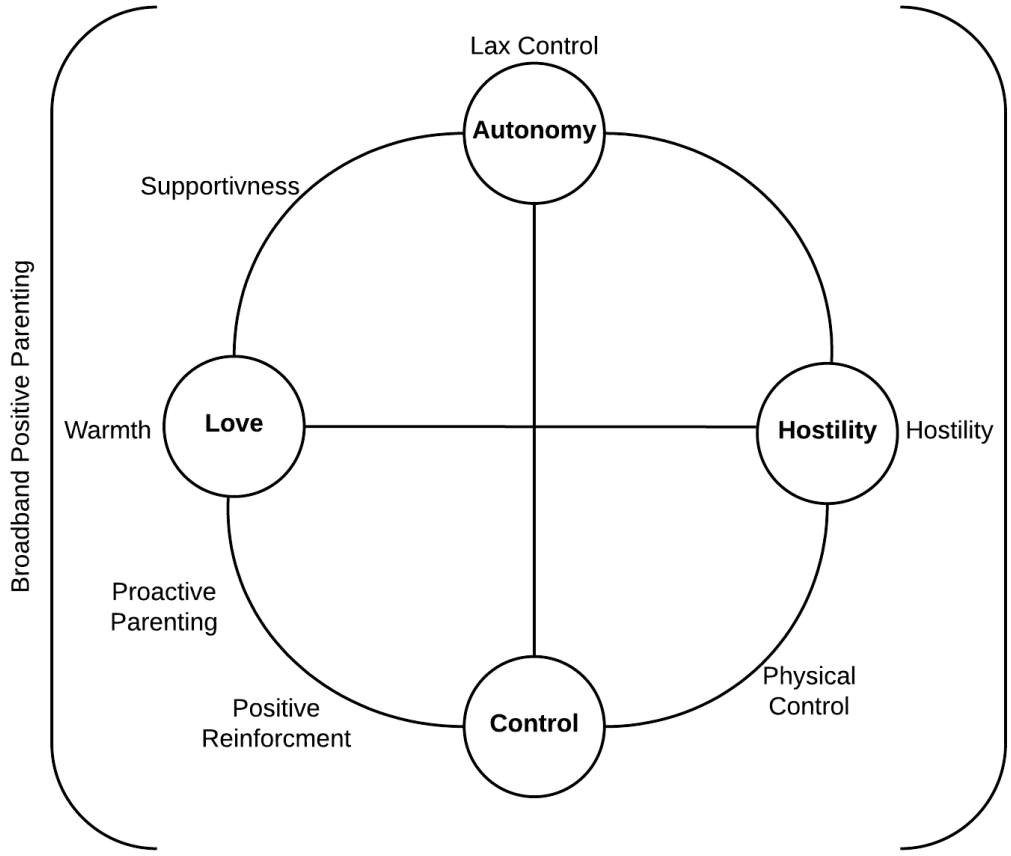
Reinforcement over time. Although not as well developed as the literature on parent-to-child effects, these findings of child-to-parent effects are consistent with theory (e.g., coercion theory – Patterson, 1982; transactional theory – Sameroff, 1975) and empirical evidence (e.g., Belsky & Park, 2000; Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012), providing further support for the initial validity of the MAPS.

Initial support for validity of the MAPS is promising but only the beginning. Future research will aim to continue to support the validity of the MAPS by using multiple-informants (i.e., coparent report) developing and using an adolescent report form, and utilizing multiple methods (i.e., observations) for assessing both parenting and child problem behavior. In addition, examining child behavior among at-risk and clinical populations may result in more meaningful variance in problem behaviors change over time. Finally, MAPS subscale change overtime as a function of intervention can and will occur.

Although the stages of the current study embody an empirical approach to scale development, it also has important theoretical considerations. Many theoretical models include parenting practices as key components hypothesized to either promote or inhibit healthy child psychosocial development (e.g., attachment theory – Bowlby, 1969; ecological systems theory – Bronfenbrenner, 1979, 1986; ethological theory – Belsky, Steinberg, & Draper, 1991; social learning theories – Patterson, 1982) but few have been dedicated solely to parenting dimensionality (for a review, see Holden, 1997). Schaefer's (1959) circuplex model of parenting, initially presented in Figure 1 in the Introduction, is one of the only theoretical conceptualizations that focuses solely on parenting domains without a major emphasis on child outcomes. The MAPS narrowband factor structure is

supportive of Schaefer's circumplex model and each subscale is depicted on the outside of this model in Figure 5. The Warmth and Hostility narrowband MAPS scales are solely on the warmth versus hostility higher-order domain. The Lax Control narrowband subscale is unique among the other MAPS subscales in that it alone can serve as the autonomy versus control higher-order axis because higher scores represent lax discipline (autonomy) and lower scores represent firm control (control). The Proactive Parenting and Positive Reinforcement narrowband scales each involve higher levels of warmth and control and represent positive behavioral control strategies. The Supportiveness narrowband subscale aligns well with both warmth and autonomy support opposite the Physical Control narrowband subscale which is equally over-controlling and hostile.

Figure 5. *Schaefer's circumplex model of parenting with MAPS subscales*



The MAPS factor structure also differs and advances the original conceptualizations by Schaefer in two ways. First, the Broadband Positive Parenting scale is divergent from Schaefer's theoretical conceptualization but was supported by both hierarchical and bifactor ESEM analyses. Depicted in Figure 5 on the outside of the model, higher scores on the Broadband Positive Parenting scale would represent high levels of warmth and supportiveness, as well as positive control that is neither over- nor under-controlling. The Broadband Positive Parenting scale is in a way akin to Baumrind's (1989) authoritative control in that it includes domains of positive and child-centered control (Positive Reinforcement and Proactive Parenting) and domains of warmth (Warmth and Supportiveness). The lack of support for a Broadband Negative

Parenting scale, although not congruent with study hypotheses, is supportive of Schaefer's circumplex model because the combination of over- and under-control and hostility would not have fit within this theoretical model.

Second, two narrowband domains were not represented in the final factor structure that were part of Schaefer's original model: neglect and psychological control. The absence of a neglect narrowband subscale resulted in a final factor structure that does not include a domain high on autonomy and hostility. Psychological control (e.g., guilt induction) is considered by many as a key parenting domain (e.g., Barber, 1997) and its absence in the MAPS results in only a physical form of the combination of over-control and hostility. One explanation for the loss of neglect and psychological control items is the limited variability in responding. In essence, parents may be less aware of or inclined to report neglecting behavior or the use of psychological control strategies. Therefore, it may be that these narrowband domains are best assessed by child report, especially given established child-report measures of these domains (e.g., Schaefer. 1965). Future research aimed at improving the MAPS will explore these hypotheses as well as ways to improve parent-reported items assessing these domains.

Although not in Schaefer's original model, the final factor structure of the MAPS is notably missing a monitoring narrowband subscale. Substantial research and theory has pointed to the importance of this construct (Dishion & McMahon, 1998). However, Stattin and Kerr's (Stattin & Kerr, 2000; Kerr & Stattin, 2000) seminal work challenged our understanding of parental monitoring by shifting attention to the child as information managers (e.g., deciding when to disclose information). Their work has encouraged researchers to think about the interactional and relational processes that keep, or fail to

keep, parents informed rather than focusing solely on this parenting behavior. Given that most of the monitoring items were eliminated at early stages in the development (i.e., stage 1), this further supports the view that measuring child's disclosure (or lack thereof), preferably child-reported, be given strong consideration in addition to traditional parent-direct efforts to monitor and gain knowledge of child behavior.

In addition to the limitations discussed previously, there are two primary limitations of the current study to be addressed in future research on the MAPS. First, the current sample was primarily White (78%), educated, and middle or upper income, leaving open to question the generalizability of the MAPS to more diverse families. As was the developmental path for the ASEBA measures, a next step will be to examine the factor structure and psychometric properties with diverse samples. Second, due to the crowdsourcing methodology, all variables were from a single reporter. This potentially introduces the issue of shared method variance and limits support for validity without cross-informant and method associations. The next step in the development of the MAPS will be to validate coparent and adolescent report versions as well as establishing associations between MAPS subscales and both observed parenting practices and child outcomes assessed by multiple informants (e.g., adolescents, teachers).

The current study also had three primary strengths not discussed thus far. First, the MAPS was developed through five rigorous stages using separate samples for each set of factor analyses as advocated by methodologists (e.g., Brown, 2006; Matsunaga, 2010). Second, the current study used advanced statistical methods for determining final factor structure (e.g., exploratory structural equation modeling), establishing reliability (omega coefficient with bootstrapped confidence intervals; longitudinal ESEM), and

providing initial support for validity (e.g., latent growth curve modeling). Third, all three samples used for the developmental of the MAPS were constituted by at least 40% father participants, a group which is most often underrepresented in clinical child and adolescent research (Phares, 1992; Phares et al., 2005). Previous parenting measures were often exclusively developed with mothers to the exclusion of fathers, which makes the current work with the MAPS a particular strength.

Conclusions

The present study developed the MAPS using a multi-stage empirically-based approach. The factor structure of the MAPS was invariant across child developmental stages, included both positive and negative domains, and evidenced strong psychometric properties. Although the current study embodied an empirical approach, the final factor structure is congruent with Schaefer's circumplex model of parenting, in a way returning to the field's original roots, and provides a basis for new research and applications. Poor psychometric properties and inconsistent use of multiple conceptualizations and operationalizations has created ambiguity in parenting research. The development of the MAPS represents a first step toward creating a system of evidenced-based parenting assessment that overcomes issues of previous measures. There is more work to be done, but initial results are promising.

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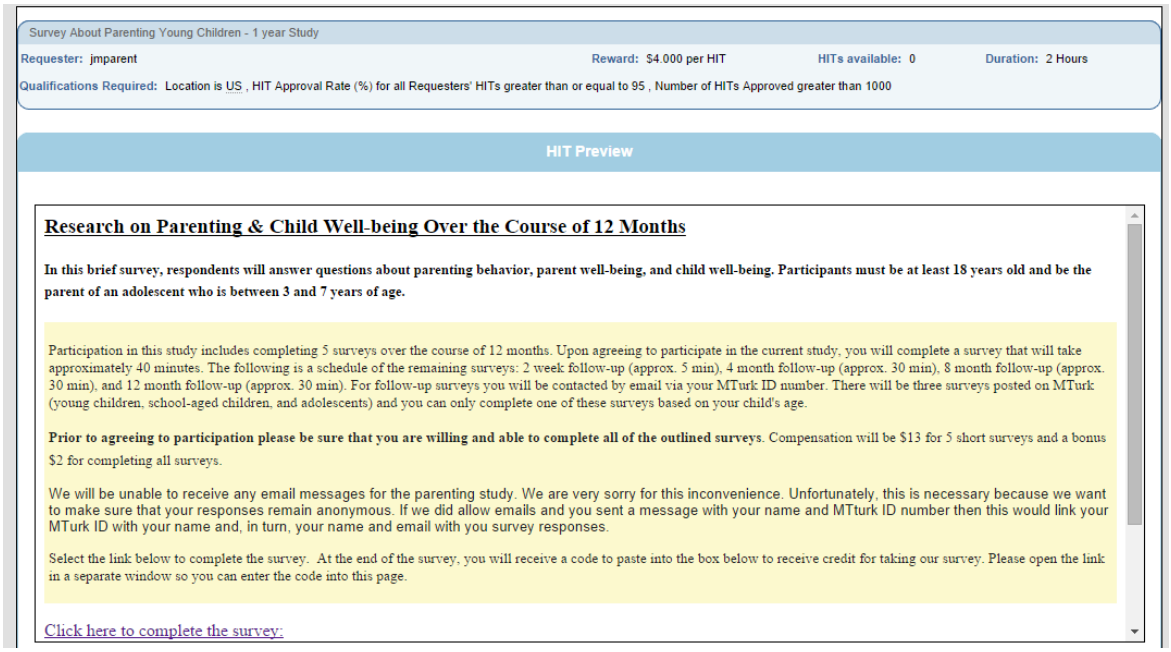
Appendices

Appendix A. Recruitment information listed on MTurk for stage 3.



Appendix B. Parenting Scale changes.

Original Items:

1. When my child misbehaves...								
I do something right away	1	2	3	4	5	6	7	I do something about it later
2. Before I do something about a problem...								
I give my child several reminders or warnings	1	2	3	4	5	6	7	I use only one reminder or warning
3. When I'm upset or under stress...								
I am picky and on my child's back	1	2	3	4	5	6	7	I am no more picky than usual
4. When I tell my child not to do something...								
I say very little	1	2	3	4	5	6	7	I say a lot
5. When my child pesters me...								
I can ignore the pestering	1	2	3	4	5	6	7	I can't ignore the pestering

Changes made to items:

3. When I'm upset or under stress I am picky and on my child's back
   ~~I am no more picky than usual~~

6. When my child misbehaves I don't get into an argument.

   ~~I usually get into a long argument with my child~~

7. I threaten to do things that I am sure I can carry out
   ~~I know I won't actually do~~

8. I am the kind of parent that lets my child do whatever he/she wants.

   ~~Set limits on what my child is allowed to do~~

9. When my child misbehaves I give my child a long lecture
   ~~I keep my talks short and to the point~~

10. When my child misbehaves I speak to my child calmly
    ~~I raise my voice or yell~~

12. When I want my child to stop doing something I firmly tell my child to stop
    ~~I coax or beg my child to stop.~~

14. After there's been a problem with my child I often hold a grudge.

~~Things get back to normal quickly.~~

15. When we're not at home I let my child get away with a lot more
    ~~I handle my child the way I do at home~~

16. When my child does something I don't like I do something about it every time it happens
    ~~I often let it go.~~

17. When there is a problem with my child things don't get out of hand.

    ~~Things build up and I do things I don't mean to do~~

18. When my child misbehaves, I spank, slap, grab, or hit my child
    ~~Never or rarely~~
    ~~Most of the time~~

19. When my child doesn't do what I ask I take some other action.
    ~~I often let it go or end up doing it myself~~

20. When I give a fair threat or warning I often don't carry it out.
    ~~I always do what I said.~~

21. If saying "No" doesn't work I offer my child something nice so he/she will behave.
    ~~I take some other kind of action~~

22. When my child misbehaves I handle it without getting upset
    ~~I get so frustrated or angry that my child can see I'm upset.~~

24. If my child misbehaves and then acts sorry I handle the problem like I usually would
    ~~I let it go that time.~~

25. When my child misbehaves I almost always use bad language or curse
    ~~I rarely use bad language or curse~~

26. When I say my child can't do something I stick to what I said.
    ~~I let my child do it anyway~~

28. When my child does something I don't like, I insult my child, say mean things, or call my child names…
    ~~Never or rarely~~
    ~~Most of the time.~~
30. If my child gets upset when I say "No" I back down and give in to my child
    ~~I stick to what I said.~~

Appendix C. Parenting items administered in stage 1.

Note: Highlighted items not administered to the young childhood sample.

Multidimensional Assessment of Parenting Scale

Instructions: Parents have different ways of trying to raise their children. Please read each statement and rate how much each one best describes your parenting during the past two months with [target child].

Never (1), Almost Never (2), Sometimes (3), Often (4), Always (5)

1. I am responsive to my child's feelings or needs.
2. I will talk to my child again and again about anything bad he/she does.
3. I talk it over and reason with my child when she/he misbehaves.
4. You drive your child to a special activity.
5. I discipline my child by having her/him take a time-out, complete a work chore, or remove a privilege.
6. I laugh with my child about things we find funny.
7. I take my child's desires into account before asking my child to do something.
8. I offer to help, or help, my child with things she/he is doing.
9. If saying "No" doesn't work, I offer my child something nice so he/she will behave.
10. I prepare my child for a challenging situation (such as starting a new school).
11. I have disciplined my child in the presence of others.
12. I know where my child goes when he/she is out with friends.
13. I do not check up to see whether my child has done what I told her/him to do.
14. I know what type of homework my child has.
15. I know when my child has an exam or assignment due at school
16. I encourage my child to do well in school.

17. I scold and criticize to make my child improve.

18. I do not insist my child obeys if she/he complains and protests.

19. I allow my child to annoy someone else.

20. I let my child go anyplace she/he pleases without asking.

21. I know the names of my child's friends.

22. I express affection by hugging, kissing, and holding my child.

23. I explain to my child how I feel about her/his good and bad behavior.

24. I make my whole life center around my child.

25. When my child does something I don't like, I insult my child, say mean things, or call my child a name.

26. I tell my child what I want him/her to do rather than tell him/her to stop doing something.

27. I feel hurt when my child does not follow my advice.

28. I believe that if my child loves me, she/he would do what I want her/him to do.

29. If my child whines or complains when I take away a privilege, I will give it back.

30. I talk to your child about his/her friends.

31. I am afraid that disciplining my child for misbehavior will cause her/him to not like me.

32. I get so busy that I forget where your child is and what he/she is doing.

33. When my child misbehaves, I give her/him a long lecture

34. I argue with my child.

35. I repeatedly tell my child how she/he should behave.

36. I explain the consequences of my child's behavior to her/him.

37. When I review my child's report card, I tell her/him how proud I am of her/his work.

38. I listen to my child's feelings and try to understand them.

39. I do not know what my child spends his or her money on.

40. If I ask my child to do something, I tell her/him “thank you” when he/she carries out the request.

41. I use threats as punishment with little or no justification.

42. I enjoy doing things with my child.

43. I punish my child for doing something one day, but ignore it the next.

44. I tell my child what to do.

45. I am aware of problems or concerns about my child in school.

46. The punishment I give my child depends on my mood.

47. I forget to help my child when she/he needs it.

48. I do not discipline my child when he/she has done something wrong.

49. I am very involved in my child’s life.

50. I do not share many activities with my child.

51. I demand that my child does something (or stops doing something) right away when I request her/him to do so.

52. I keep a careful check on my child to make sure that she/he has the right kind of friends.

53. When spanking my child, I have used other things besides my hand.

54. I yell or shout when my child misbehaves.

55. My child talks me out of punishing him/her after he/she has done something wrong.

56. I plan ways to prevent problem behavior by my child.

57. I believe that physical punishment is the only method that can be used to control my child’s behavior.

58. If my child does his chores, I will recognize his/her behavior in some manner.

59. I let my child out of a punishment early (like lift restrictions earlier than I originally said).

60. I have warm and intimate times together with my child.

61. In the past month, I often have had no idea where my child was at night.

62. When my child misbehaves, I handle it without getting upset

63. I encourage my child to freely express himself/herself even when disagreeing with me.

64. If my child misbehaves, I will swear at him/her or call him/her names.

65. I allow my child to interrupt others.

66. I set rules on my child's problem behavior that I am willing/able to enforce.

67. I carry out discipline after my child misbehaves.

68. When my child misbehaves, I do not get into an argument.

69. I do not know how my child does on different subjects at school.

70. I ignore my child's minor misbehavior.

71. I explain what I want my child to do in clear and simple ways.

72. I volunteer to help with special activities in which my child is involved (such as sports, boy/girl scouts, church youth groups).

73. I tell my child how I expect him or her to behave (such as in the grocery store).

74. I slap my child when he/she misbehaves.

75. I channel my child's misbehavior into a more acceptable activity.

76. I spend very little time with my child.

77. I give comfort and understanding when my child is upset.

78. I believe that reminding my child of all the bad things he/she has done will help him/her to be good.

79. I show respect for my child's opinions by encouraging him/her to express them.

80. I want my child to tell me if he/she does not like the way I treat *her/him*.

81. When my child does something I do not like, I do something about it every time it happens.

82. I stand back and let my child work through problems s/he might be able to solve.

83. I explode in anger toward my child.

84. When there is a problem with my child, things do not get out of hand.

85. I take into account my child's preferences in making plans for the family.

86. When my child misbehaves, I speak to my child calmly.

87. I believe in having a lot of rules and sticking with them.

88. If my child misbehaves and then acts sorry, I handle the problem like I usually would.

89. I do not know what my child does and where he/she goes after school.

90. I spank my child with my hand when he/she has done something wrong.

91. I give my child reasons why rules should be obeyed.

92. I let my child stay out after dark without an adult with him/her.

93. I tell my child that I appreciate what he/she tries to accomplish or does accomplish.

94. I ground my child for days at a time when she/he disobeys.

95. I withhold scolding and/or criticism even when my child acts contrary to my wishes.

96. I have friendly talks with my child.

97. I give reasons for my requests (such as "We must leave in five minutes, so it's time to clean up.")

98. I refuse to speak to my child if she/he irritated me.

99. I say mean things to my child that could make him/her feel bad.

100. I believe that trying to reason with my child will not help her/him to behave appropriately.

101. I know what my child does during his or her free time.

102. I joke and play with my child.

103. After there has been a problem with my child, I often hold a grudge.

104. When my child asks why he/she has to conform, I state “Because I said so.”

105. I apologize to my child when making a mistake in parenting.

106. I spoil my child.

107. I lose my temper when my child doesn't do something I ask him/her to do.

108. I encourage my child to talk about her/his troubles.

109. If I give my child a request and she/he carries out the request, I praise her/him for listening and complying.

110. I do not know whom my child has as friends during his or her free time.

111. I am not very patient with my child.

112. I am easy going and relaxed with my child.

113. I try to teach my child new things.

114. I believe that if my child has misbehaved during the day, none of his/her good behavior should be rewarded.

115. I insist that my child must do exactly as she/he is told.

116. I attend PTA meetings, parent/teacher conferences, or other meetings at my child’s school.

117. I set well-established rules for my child.

118. I make a game out of everyday tasks so my child follows through.

119. I ask my child what his/her plans are for the coming day.

120. I complain about my child's behavior or tell him I do not like what s/he is doing.

121. I don't tell my child where I am going when I leave the house.

122. I am the kind of parent who lets my child do whatever he/she wants.

123. I want to know exactly where my child is and what he/she is doing.

124. If my child gets upset when I say "No," I back down and give in to her/him.

125. I show patience with my child.

126. I believe that in order to manage my child's behavior, I have to be strict.

127. I show my child that I am interested in how well she/he is doing in school.

128. I take away a privilege for a week or more when my child misbehaves.

129. I break a task into small steps for my child.

130. I stick to a rule instead of allowing a lot of exceptions.

131. I show sympathy when my child is hurt or frustrated.

132. I will not talk with my child when I am displeased with him/her.

133. My child and I hug and/or kiss each other.

134. I find it difficult to discipline my child.

135. I complain about what my child does.

136. I reward or give something extra to my child for obeying or behaving well.

137. I speak calmly with my child when I am upset with him or her.

138. I have more rules than my child can remember.

139. I feel that getting my child to obey is more trouble than it's worth.

140. I spank my child when I am extremely angry.

141. When I give my child a warning about a consequence for her/his behavior, I often don't carry it out.

142. When I want my child to stop doing something, I firmly tell my child to stop.

143. When I'm disappointed in my child's behavior, I remind him/her about how much I have done for him/her.

144. I warn my child before a change of activity is required (such as a five-minute warning before leaving the house in the morning).

145. I allow my child to give input into family rules.

146. If my child hits me, I will hit him/her back even harder to teach him a lesson.

147. I guide my child by punishment more than by reason.

148. I threaten to do only things that I am sure I can carry out.

149. I believe that all of my child's bad behavior should be punished in some way.

150. My child stays at home without adult supervision.

151. I threaten to punish my child and then do not actually punish him/her.

152. I believe that trying to explain to my child why his/her behavior is not appropriate is a waste of time and energy.

153. I use physical punishment as a way of disciplining my child.

154. I criticize my child in front of others.

155. When my child asks for help or attention, I ignore him/her or make him/her wait until later.

156. If my child completes an unexpected task or chore, I will make a big deal about it.

157. If my child cleans his room, I will tell him/her how proud I am.

158. I give into my child when she/he causes a commotion about something.

159. I notice and praise my child's good behavior

160. My child goes out without a set time to be home.

161. I tell my child my expectations regarding behavior before my child engages in an activity.

162. When I am upset or under stress, I am picky and on my child's back.

163. My child stays out in the evening past the time he/she is supposed to be home.

164. I involve my child in household chores.

165. I tell my child that I like it when he/she helps out around the house.

166. I help my child with his/her homework.

167. When I say my child cannot do something, I stick to what I said.

168. I do not check that my child comes home at the time she/he was supposed to.

169. I listen to my child's ideas and opinions.

170. I make sure my child follows the rules I set.

171. I avoid struggles with my child by giving clear choices.

172. When we are not at home, I let my child get away with a lot more.

173. I teach my child new skills.

174. I am more concerned with own feelings than with my child's feelings.

175. I grab or shake my child when she/he is disobedient.

176. When my child misbehaves, I let him know what will happen if she/he doesn't behave.

177. I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked.

178. I provide my child with a brief explanation when I discipline his/her misbehavior.

179. I invite my child to play a game with me or share an enjoyable activity.

Appendix D: Stage 1 eliminated items

~~1. I am responsive to my child's feelings or needs.~~

~~2. I will talk to my child again and again about anything bad he/she does.~~

~~3. I talk it over and reason with my child when she/he misbehaves.~~

~~4. You drive your child to a special activity.~~

5. I discipline my child by having her/him take a time-out, complete a work chore, or remove a privilege.

~~6. I laugh with my child about things we find funny.~~

~~7. I take my child's desires into account before asking my child to do something.~~

~~8. I offer to help, or help, my child with things she/he is doing.~~

~~9. If saying "No" doesn't work, I offer my child something nice so he/she will behave.~~

~~10. I prepare my child for a challenging situation (such as starting a new school).~~

11. I have disciplined my child in the presence of others.

~~12. I know where my child goes when he/she is out with friends.~~

13. I do not check up to see whether my child has done what I told her/him to do.

~~14. I know what type of homework my child has.~~

~~15. I know when my child has an exam or assignment due at school~~

~~16. I encourage my child to do well in school.~~

~~17. I scold and criticize to make my child improve.~~

18. I do not insist my child obeys if she/he complains and protests.

19. I allow my child to annoy someone else.

20. I let my child go anyplace she/he pleases without asking.

~~21. I know the names of my child's friends.~~

22. I express affection by hugging, kissing, and holding my child.

~~23. I explain to my child how I feel about her/his good and bad behavior.~~

~~24. I make my whole life center around my child.~~

25. When my child does something I don't like, I insult my child, say mean things, or call my child a name.

~~26. I tell my child what I want him/her to do rather than tell him/her to stop doing something.~~

~~27. I feel hurt when my child does not follow my advice.~~

~~28. I believe that if my child loves me, she/he would do what I want her/him to do.~~

29. If my child whines or complains when I take away a privilege, I will give it back.

~~30. I talk to your child about his/her friends.~~

31. I am afraid that disciplining my child for misbehavior will cause her/him to not like me.

32. I get so busy that I forget where your child is and what he/she is doing.

~~33. When my child misbehaves, I give her/him a long lecture~~

34. I argue with my child.

35. I repeatedly tell my child how she/he should behave.

~~36. I explain the consequences of my child's behavior to her/him.~~

~~37. When I review my child's report card, I tell her/him how proud I am of her/his work.~~

~~38. I listen to my child's feelings and try to understand them.~~

39. I do not know what my child spends his or her money on.

~~40. If I ask my child to do something, I tell her/him "thank you" when he/she carries out the request.~~

41. I use threats as punishment with little or no justification.

~~42. I enjoy doing things with my child.~~

43. I punish my child for doing something one day, but ignore it the next.

~~44. I tell my child what to do.~~

45. I am aware of problems or concerns about my child in school.

46. The punishment I give my child depends on my mood.

47. I forget to help my child when she/he needs it.

48. I do not discipline my child when he/she has done something wrong.

~~49. I am very involved in my child's life.~~

50. I do not share many activities with my child.

51. I demand that my child does something (or stops doing something) right away when I request her/him to do so.

~~52. I keep a careful check on my child to make sure that she/he has the right kind of friends.~~

53. When spanking my child, I have used other things besides my hand.

54. I yell or shout when my child misbehaves.

55. My child talks me out of punishing him/her after he/she has done something wrong.

56. I plan ways to prevent problem behavior by my child.

57. I believe that physical punishment is the only method that can be used to control my child's behavior.

58. If my child does his chores, I will recognize his/her behavior in some manner.

59. I let my child out of a punishment early (like lift restrictions earlier than I originally said).

60. I have warm and intimate times together with my child.

~~61. In the past month, I often have had no idea where my child was at night.~~

~~62. When my child misbehaves, I handle it without getting upset~~

63. I encourage my child to freely express himself/herself even when disagreeing with me.

~~64. If my child misbehaves, I will swear at him/her or call him/her names.~~

~~65. I allow my child to interrupt others.~~

66. I set rules on my child's problem behavior that I am willing/able to enforce.

67. I carry out discipline after my child misbehaves.

~~68. When my child misbehaves, I do not get into an argument.~~

69. I do not know how my child does on different subjects at school.

~~70. I ignore my child's minor misbehavior.~~

~~71. I explain what I want my child to do in clear and simple ways.~~

~~72. I volunteer to help with special activities in which my child is involved (such as sports, boy/girl scouts, church youth groups).~~

73. I tell my child how I expect him or her to behave (such as in the grocery store).

74. I slap my child when he/she misbehaves.

~~75. I channel my child's misbehavior into a more acceptable activity.~~

~~76. I spend very little time with my child.~~

~~77. I give comfort and understanding when my child is upset.~~

78. I believe that reminding my child of all the bad things he/she has done will help him/her to be good.

79. I show respect for my child's opinions by encouraging him/her to express them.

~~80. I want my child to tell me if he/she does not like the way I treat *her/him*.~~

~~81. When my child does something I do not like, I do something about it every time it happens.~~

~~82. I stand back and let my child work through problems s/he might be able to solve.~~

83. I explode in anger toward my child.

~~84. When there is a problem with my child, things do not get out of hand.~~

85. I take into account my child's preferences in making plans for the family.

~~86. When my child misbehaves, I speak to my child calmly.~~

87. I believe in having a lot of rules and sticking with them.

~~88. If my child misbehaves and then acts sorry, I handle the problem like I usually would.~~

~~89. I do not know what my child does and where he/she goes after school.~~

90. I spank my child with my hand when he/she has done something wrong.

91. I give my child reasons why rules should be obeyed.

~~92. I let my child stay out after dark without an adult with him/her.~~

93. I tell my child that I appreciate what he/she tries to accomplish or does accomplish.

94. I ground my child for days at a time when she/he disobeys.

~~95. I withhold scolding and/or criticism even when my child acts contrary to my wishes.~~

~~96. I have friendly talks with my child.~~

97. I give reasons for my requests (such as "We must leave in five minutes, so it's time to clean up.")

98. I refuse to speak to my child if she/he irritated me.

99. I say mean things to my child that could make him/her feel bad.

100. I believe that trying to reason with my child will not help her/him to behave appropriately.

~~101. I know what my child does during his or her free time.~~

~~102. I joke and play with my child.~~

103. After there has been a problem with my child, I often hold a grudge.

104. When my child asks why he/she has to conform, I state “Because I said so.”

~~105. I apologize to my child when making a mistake in parenting.~~

~~106. I spoil my child.~~

107. I lose my temper when my child doesn't do something I ask him/her to do.

108. I encourage my child to talk about her/his troubles.

109. If I give my child a request and she/he carries out the request, I praise her/him for listening and complying.

~~110. I do not know whom my child has as friends during his or her free time.~~

111. I am not very patient with my child.

~~112. I am easy going and relaxed with my child.~~

~~113. I try to teach my child new things.~~

114. I believe that if my child has misbehaved during the day, none of his/her good behavior should be rewarded.

115. I insist that my child must do exactly as she/he is told.

116. I attend PTA meetings, parent/teacher conferences, or other meetings at my child’s school.

~~117. I set well-established rules for my child.~~

118. I make a game out of everyday tasks so my child follows through.

119. I ask my child what his/her plans are for the coming day.

120. I complain about my child's behavior or tell him I do not like what s/he is doing.

121. I don’t tell my child where I am going when I leave the house.

122. I am the kind of parent who lets my child do whatever he/she wants.

123. I want to know exactly where my child is and what he/she is doing.

124. If my child gets upset when I say "No," I back down and give in to her/him.

~~125. I show patience with my child.~~

126. I believe that in order to manage my child's behavior, I have to be strict.

~~127. I show my child that I am interested in how well she/he is doing in school.~~

128. I take away a privilege for a week or more when my child misbehaves.

~~129. I break a task into small steps for my child.~~

130. I stick to a rule instead of allowing a lot of exceptions.

131. I show sympathy when my child is hurt or frustrated.

132. I will not talk with my child when I am displeased with him/her.

133. My child and I hug and/or kiss each other.

134. I find it difficult to discipline my child.

135. I complain about what my child does.

~~136. I reward or give something extra to my child for obeying or behaving well.~~

~~137. I speak calmly with my child when I am upset with him or her.~~

~~138. I have more rules than my child can remember.~~

139. I feel that getting my child to obey is more trouble than it's worth.

140. I spank my child when I am extremely angry.

141. When I give my child a warning about a consequence for her/his behavior, I often don't carry it out.

~~142. When I want my child to stop doing something, I firmly tell my child to stop.~~

143. When I'm disappointed in my child's behavior, I remind him/her about how much I have done for him/her.

144. I warn my child before a change of activity is required (such as a five-minute warning before leaving the house in the morning).

145. I allow my child to give input into family rules.

146. If my child hits me, I will hit him/her back even harder to teach him a lesson.

147. I guide my child by punishment more than by reason.

~~148. I threaten to do only things that I am sure I can carry out.~~

149. I believe that all of my child's bad behavior should be punished in some way.

~~150. My child stays at home without adult supervision.~~

151. I threaten to punish my child and then do not actually punish him/her.

152. I believe that trying to explain to my child why his/her behavior is not appropriate is a waste of time and energy.

153. I use physical punishment as a way of disciplining my child.

154. I criticize my child in front of others.

155. When my child asks for help or attention, I ignore him/her or make him/her wait until later.

~~156. If my child completes an unexpected task or chore, I will make a big deal about it.~~

157. If my child cleans his room, I will tell him/her how proud I am.

158. I give into my child when she/he causes a commotion about something.

~~159. I notice and praise my child's good behavior~~

160. My child goes out without a set time to be home.

161. I tell my child my expectations regarding behavior before my child engages in an activity.

162. When I am upset or under stress, I am picky and on my child's back.

~~163. My child stays out in the evening past the time he/she is supposed to be home.~~

~~164. I involve my child in household chores.~~

165. I tell my child that I like it when he/she helps out around the house.

166. I help my child with his/her homework.

167. When I say my child cannot do something, I stick to what I said.

168. I do not check that my child comes home at the time she/he was supposed to.

169. I listen to my child's ideas and opinions.

~~170. I make sure my child follows the rules I set.~~

171. I avoid struggles with my child by giving clear choices.

172. When we are not at home, I let my child get away with a lot more.

~~173. I teach my child new skills.~~

174. I am more concerned with own feelings than with my child's feelings.

175. I grab or shake my child when she/he is disobedient.

176. When my child misbehaves, I let him know what will happen if she/he doesn't behave.

177. I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked.

178. I provide my child with a brief explanation when I discipline his/her misbehavior.

179. I invite my child to play a game with me or share an enjoyable activity.

Appendix E. Positive parenting item-level correlations

Young Childhood

Item 22:
Small (.10 - .29): items 144, 161, 167, 176
Medium (.30 - .49): items 66, 73, 79, 91, 97, 108, 109, 118, 123, 165, 169, 171, 178
Large (.50 - .69): items 58, 60, 133, 157,
XL (.70 - 1.0): none

Item 58:
Small (.10 - .29): item
Medium (.30 - .49): items 60, 73, 118, 144, 161, 167, 169, 171, 176
Large (.50 - .69): items 22, 66, 79, 91, 97, 108, 109, 123, 133, 157, 165, 178
XL (.70 - 1.0): item 119

Item 60:
Small (.10 - .29): items 66, 73, 144, 161, 171, 176
Medium (.30 - .49): items 58, 75, 89, 91, 97, 108, 109, 118, 123, 157, 165, 167, 169, 178
Large (.50 - .69): items 22, 133
XL (.70 - 1.0): item

Item 66:
Small (.10 - .29): items 60, 118, 119
Medium (.30 - .49): items 22, 79, 91, 97, 108, 109, 123, 133, 144, 161, 165, 167, 169, 171, 176, 178
Large (.50 - .69): items 58, 73, 157
XL (.70 - 1.0): item

Item 73:
Small (.10 - .29): items 60, 118
Medium (.30 - .49): 22, 58, 79, 97, 108, 109, 123, 133, 144, 157, 161, 165, 167, 169, 171, 176, 178
Large (.50 - .69): items 66, 91
XL (.70 - 1.0): item

Item 79:
Small (.10 - .29): item
Medium (.30 - .49): items 22, 60, 66, 73, 91, 118, 123, 133, 144, 157, 161, 167, 171, 176, 178
Large (.50 - .69): items 58, 97, 108, 109, 165, 169
XL (.70 - 1.0): none

Item 91:
Small (.10 - .29): item
Medium (.30 - .49): items 22, 60, 66, 79. 108, 118, 123, 133, 144, 157, 161, 165, 167, 171, 176, 178
Large (.50 - .69): items 58, 73, 97, 109, 169
XL (.70 - 1.0): none

Item 97:
Small (.10 - .29): item
Medium (.30 - .49): items 22, 60, 66, 73, 118, 123, 133, 144, 161, 167, 169, 171, 176
Large (.50 - .69): items 58, 79, 91, 108, 109, 157, 165, 178
XL (.70 - 1.0): item 119

Item 108:
Small (.10 - .29): none
Medium (.30 - .49): items 22, 60, 66, 73, 91, 118, 144, 157, 161, 167, 171, 176, 178
Large (.50 - .69): items 58, 79, 97, 109, 123, 133, 165, 169
XL (.70 - 1.0): items

Item 109:
Small (.10 - .29): item
Medium (.30 - .49): items 22, 60, 66, 118, 144, 161, 167, 169, 171, 176
Large (.50 - .69): items 58, 73, 79, 91, 97, 108, 123, 133, 157, 165, 178
XL (.70 - 1.0): item

Item 118:
Small (.10 - .29): items 66, 73, 165, 167, 176
Medium (.30 - .49): items 22, 58, 60, 79, 91, 97, 108, 109, 123, 133, 144, 157, 161, 169, 171, 178
Large (.50 - .69): item 119
XL (.70 - 1.0): item

Item 123:
Small (.10 - .29): items
Medium (.30 - .49): items 22, 60, 66, 73, 79, 91, 97, 118, 133, 144, 157, 161, 167, 169, 171, 176
Large (.50 - .69): items 58, 108, 109, 165, 178
XL (.70 - 1.0): item

Item 133:
Small (.10 - .29): items
Medium (.30 - .49): items 66, 73, 79, 91, 97, 118, 123, 144, 161, 167, 171, 176, 178
Large (.50 - .69): items 22, 58, 60, 108, 109, 157, 165, 169
XL (.70 - 1.0): items

Item 144:
Small (.10 - .29): items 22, 60
Medium (.30 - .49): 58, 66, 73, 79, 91, 97, 108, 109, 118, 123, 133, 157, 161, 165, 167, 169, 171, 176
Large (.50 - .69): items 178
XL (.70 - 1.0): none

Item 157:
Small (.10 - .29): items 119
Medium (.30 - .49): items 60, 73, 79, 91, 108, 118, 123, 144, 161, 167, 169, 171, 176, 178
Large (.50 - .69): items 22, 58, 66, 97, 109, 133, 165
XL (.70 - 1.0): item

Item 161:
Small (.10 - .29): items 22, 60,
Medium (.30 - .49): items 58, 66, 73, 79, 91, 97, 108, 109, 118, 123, 133, 144, 157, 165, 167, 169, 176, 178
Large (.50 - .69): items 171
XL (.70 - 1.0): item

Item 165:
Small (.10 - .29): items 118
Medium (.30 - .49): items 22, 60, 66, 73, 91, 161, 171, 176
Large (.50 - .69): items 58, 79, 97, 108, 109, 123, 133, 157, 167, 169, 178
XL (.70 - 1.0): item

Item 167:
Small (.10 - .29): items 22, 118
Medium (.30 - .49): items 58, 60, 66, 73, 79, 91, 97, 108, 109, 123, 133, 144, 157, 161, 169, 171
Large (.50 - .69): items 165, 176, 178
XL (.70 - 1.0): item

Item 169:
Small (.10 - .29): items 176
Medium (.30 - .49): items 22, 58, 60, 66, 73, 97, 109, 118, 123, 144, 157, 161, 167, 171
Large (.50 - .69): items 79, 91, 108, 133, 165, 178
XL (.70 - 1.0): item 119

Item 171:
Small (.10 - .29): items 60,
Medium (.30 - .49):22, 58, 66, 73, 79, 91, 97, 108, 109, 118, 123, 133, 144, 157, 165, 167, 169, 176, 178
Large (.50 - .69): item 161
XL (.70 - 1.0): none

Item 176:
Small (.10 - .29): items 22, 60, 118, 169
Medium (.30 - .49): items 58, 66, 73, 79, 91, 97, 108, 109, 123, 133, 144, 157, 161, 165, 171

Large (.50 - .69): items 167, 178
XL (.70 - 1.0): item

Item 178:

Small (.10 - .29): none
Medium (.30 - .49): items 22, 60, 66, 73, 79, 91, 118, 133, 157, 161, 169, 171
Large (.50 - .69): items 58, 97, 108, 109, 123, 144, 165, 167, 176
XL (.70 - 1.0): item

Middle Childhood

Item 22:

Small (.10 - .29): items 58, 66, 73, 79, 97, 123, 144, 161, 167, 176, 178
Medium (.30 - .49): items 60, 91, 108, 109, 118, 157, 165, 169, 171
Large (.50 - .69): item 133
XL (.70 - 1.0): none

Item 58:

Small (.10 - .29): items 22, 60,
Medium (.30 - .49): items 66, 73, 79, 91, 97, 108, 118, 123, 133, 144, 161, 167, 169, 171, 176
Large (.50 - .69): items 109, 157, 165, 178
XL (.70 - 1.0): none

Item 60:

Small (.10 - .29): items 58, 66, 73, 79, 91, 97, 118, 144, 157, 165, 167, 171, 178
Medium (.30 - .49): items 22, 108, 109, 123, 133, 161, 169
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 66:

Small (.10 - .29): items 22, 60, 118,
Medium (.30 - .49):58, 73, 79, 91, 97, 108, 109, 123, 133, 144, 157, 161, 165, 167, 169, 171, 176, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 73:

Small (.10 - .29): items 22, 60, 118, 167, 169, 171
Medium (.30 - .49): items 58, 66, 79, 91, 97, 108, 109, 123, 133, 144, 157, 161, 165, 176, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 79:

Small (.10 - .29): items 22, 60, 109, 118, 167, 176
Medium (.30 - .49): items 58, 66, 73, 91, 97, 123, 133, 144, 157, 161, 165, 171, 178
Large (.50 - .69): items 108, 169
XL (.70 - 1.0): none

Item 91:

Small (.10 - .29): items 60, 118
Medium (.30 - .49): items 22, 58, 66, 73, 79, 109, 123, 133, 144, 157, 161, 167, 169, 171, 176, 178
Large (.50 - .69): items 97, 108, 165
XL (.70 - 1.0): none

Item 97:

Small (.10 - .29): items 22, 60, 118, 167, 169, 171
Medium (.30 - .49): items 58, 66, 73, 79, 108, 109, 123, 133, 144, 157, 161, 165, 171, 178
Large (.50 - .69): item 91
XL (.70 - 1.0): none

Item 108:

Small (.10 - .29): items 118, 167, 176
Medium (.30 - .49): items 22, 58, 60, 66, 73, 97, 109, 123, 133, 144, 157, 161, 171, 178
Large (.50 - .69): items 79, 91, 165, 169
XL (.70 - 1.0): none

Item 109:

Small (.10 - .29): items 79, 118, 123, 167, 169, 176, 178
Medium (.30 - .49): items 22, 60, 66, 73, 91, 97, 108, 133, 144, 161, 165, 171
Large (.50 - .69): items 58, 157
XL (.70 - 1.0): none

Item 118:

Small (.10 - .29): items 60, 66, 73, 79, 91, 97, 108, 109, 123, 144, 161, 169, 171, 176, 178
Medium (.30 - .49): items 22, 58, 133, 157, 165
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 123:

Small (.10 - .29): items 22, 109, 118, 144, 167, 171, 176
Medium (.30 - .49): items 58, 60, 66, 73, 79, 91, 97, 108, 133, 157, 161, 165, 169, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 133:

Small (.10 - .29): items 167, 176
Medium (.30 - .49): 58, 60, 66, 73, 79, 91, 97, 108, 109, 118, 123, 144, 157, 161, 165, 169, 171, 178
Large (.50 - .69): items 22
XL (.70 - 1.0): none

Item 144:

Small (.10 - .29): items 22, 60, 118, 123, 167
Medium (.30 - .49): items 58, 66, 73, 79, 91, 97, 108, 109, 133, 157, 165, 169, 171, 176, 178
Large (.50 - .69): item 161
XL (.70 - 1.0): none

Item 157:

Small (.10 - .29): items 60, 66, 118, 167
Medium (.30 - .49): items 22, 73, 79, 91, 97, 108, 123, 133, 144, 161, 169, 171, 176, 178
Large (.50 - .69): items 58, 109, 165
XL (.70 - 1.0): none

Item 161:

Small (.10 - .29): items 22, 118,
Medium (.30 - .49): 58, 60, 66, 73, 79, 91, 97, 108, 109, 123, 133, 157, 165, 167, 169, 171, 176, 178
Large (.50 - .69): item 144
XL (.70 - 1.0): none

Item 165:

Small (.10 - .29): item 60
Medium (.30 - .49): items 22, 66, 73, 79, 97, 109, 118, 123, 133, 144, 161, 167, 171, 178
Large (.50 - .69): items 58, 91, 108, 157, 169, 176
XL (.70 - 1.0): none

Item 167:

Small (.10 - .29): items 22, 60, 73, 79, 97, 108, 109, 123, 133, 144, 157, 169, 171
Medium (.30 - .49): items 58, 66, 91, 161, 165, 176, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 169:

Small (.10 - .29): items 73, 97, 109, 118, 167
Medium (.30 - .49): items 22, 58, 60, 66, 91, 123, 133, 144, 157, 161, 171, 176, 178
Large (.50 - .69): items 79, 108, 165
XL (.70 - 1.0): none

Item 171:

Small (.10 - .29): items 60, 73, 97, 118, 123, 167
Medium (.30 - .49): items 22, 58, 66, 79, 91, 108, 109, 133, 144, 157, 161, 165, 169, 176, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 176:

Small (.10 - .29): items 22, 79, 108, 109, 118, 123, 133
Medium (.30 - .49): items 58, 66, 73, 91, 97, 144, 157, 161, 167, 169, 171, 178
Large (.50 - .69): item 165
XL (.70 - 1.0): none

Item 178:

Small (.10 - .29): items 22, 60, 109, 118, 119
Medium (.30 - .49): items 66, 73, 79, 91, 97, 108, 123, 133, 144, 157, 161, 165, 167, 169, 171, 176
Large (.50 - .69): item 58

Adolescents

Item 22:

Small (.10 - .29): items 73, 118, 123, 144, 161, 167, 171, 176
Medium (.30 - .49): items 58, 60, 66, 79, 91, 97, 109, 157, 165, 169, 178
Large (.50 - .69): item 108
XL (.70 - 1.0): item 133

Item 58:

Small (.10 - .29): items 60, 73, 118, 144, 171
Medium (.30 - .49): items 22, 66, 79, 91, 97, 123, 133, 161, 167, 169, 176, 178
Large (.50 - .69): items 108, 109, 157, 165
XL (.70 - 1.0): none

Item 60:

Small (.10 - .29): items 58, 66, 73, 79, 91, 97, 109, 118, 123, 144, 157, 165, 167, 169, 171, 176, 178
Medium (.30 - .49): items 22, 108, 119
Large (.50 - .69): item 133
XL (.70 - 1.0): none

Item 66:

Small (.10 - .29): items 60, 79, 97, 118, 144, 157,
Medium (.30 - .49): items 22, 58, 73, 108, 109, 123, 133, 161, 165, 167, 169, 171, 178
Large (.50 - .69): items 91, 176
XL (.70 - 1.0): none

Item 73:

Small (.10 - .29): items 22, 58, 60, 97, 108, 118, 123, 133, 144, 157, 165, 167, 178
Medium (.30 - .49): items 66, 91, 109, 161, 176
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 79:

Small (.10 - .29): items 60, 66, 118, 123, 144, 157, 161, 171, 176, 178
Medium (.30 - .49): items 22, 58, 91, 97, 109, 133, 165, 167, 169
Large (.50 - .69): item 108
XL (.70 - 1.0): none

Item 91:

Small (.10 - .29): items 60, 118, 144,
Medium (.30 - .49): 22, 58, 73, 79, 97, 108, 109, 123, 133, 157, 161, 165, 167, 169, 171, 176, 178
Large (.50 - .69): item 66
XL (.70 - 1.0): none

Item 97:

Small (.10 - .29): items 60, 66, 73, 167, 176
Medium (.30 - .49): items 22, 58, 79, 91, 108, 109, 123, 133, 144, 157, 161, 165, 169, 171, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 109:

Small (.10 - .29): items 60, 118, 171
Medium (.30 - .49): items 22, 66, 73, 79, 91, 97, 123, 133, 144, 157, 167, 169, 176, 178
Large (.50 - .69): items 58, 108, 161, 165

XL (.70 - 1.0): none

Item 118:

Small (.10 - .29): items 22, 58, 60, 66, 73, 79, 91, 108, 109, 133, 161, 165, 167, 169, 171, 176, 178
Medium (.30 - .49): items 144,
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 123:

Small (.10 - .29): items 22, 60, 73, 79, 144, 157, 171
Medium (.30 - .49): items 58, 66, 91, 97, 108, 109, 133, 161, 165, 167, 169, 176, 178
Large (.50 - .69): item
XL (.70 - 1.0): none

Item 133:

Small (.10 - .29): items 73, 118, 167, 171, 176
Medium (.30 - .49): items 58, 66, 79, 91, 97, 109, 123, 144, 161, 165, 169, 178
Large (.50 - .69): items 60, 108
XL (.70 - 1.0): item 22

Item 144:

Small (.10 - .29): items 22, 58, 60, 66, 73, 79, 91, 123, 157, 167, 169, 176, 178
Medium (.30 - .49): items 97, 109, 118, 133, 161, 165, 171
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 157:

Small (.10 - .29): items 60, 66, 73, 79, 123, 144, 167, 171, 176
Medium (.30 - .49): items 22, 91, 97, 108, 133, 161, 169, 178
Large (.50 - .69): items 58, 109, 165
XL (.70 - 1.0): none

Item 161:

Small (.10 - .29): items 22, 79, 118
Medium (.30 - .49): items 58, 66, 73, 91, 97, 108, 109, 123, 133, 144, 157, 165, 169, 171, 176, 178
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 165:

Small (.10 - .29): items 60, 73, 118, 176
Medium (.30 - .49): items 22, 58, 66, 79, 91, 97, 123, 133, 144, 161, 167, 171, 178
Large (.50 - .69): items 108, 109, 157, 169
XL (.70 - 1.0): none

Item 167:

Small (.10 - .29): items 22, 60, 73, 97, 118, 133, 144, 157, 178
Medium (.30 - .49): items 58, 66, 79, 91, 108, 109, 123, 161, 165, 169, 171, 176
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 169:

Small (.10 - .29): items 60, 118, 144, 176
Medium (.30 - .49): items 22, 58, 66, 79, 91, 97, 109, 123, 133, 157, 161, 167, 171, 178
Large (.50 - .69): items 108, 165
XL (.70 - 1.0): none

Item 171:

Small (.10 - .29): items 22, 58, 60, 79, 109, 118, 123, 133, 157, 178
Medium (.30 - .49): items 66, 91, 97, 108, 144, 161, 165, 167, 169, 176
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 176:

Small (.10 - .29): items 22, 60, 79, 97, 118, 133, 144, 157, 165, 169
Medium (.30 - .49): items 58, 73, 91, 108, 109, 123, 161, 167, 171, 178

Large (.50 - .69): item 66
XL (.70 - 1.0): none

Item 178:

Small (.10 - .29): items 60, 73, 79, 118, 144, 167, 171
Medium (.30 - .49): items 22, 58, 66, 91, 97, 108, 109, 123, 133, 157, 161, 165, 169, 176
Large (.50 - .69): none
XL (.70 - 1.0): none

Appendix F. Hostility, lax control, and physical control correlations.

Young Childhood

Item 34:
Small (.10 - .29): items 29, 31, 59, 122, 124, 134, 139, 158, 87
Medium (.30 - .49): items 41, 46, 54, 83, 107, 162, 55
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 41:
Small (.10 - .29): items 29, 31, 55, 59, 122, 124, 134, 139, 158,
Medium (.30 - .49): items 34, 46, 54, 83, 107, 162
Large (.50 - .69): item 43
XL (.70 - 1.0): none

Item 46:
Small (.10 - .29): items 29, 31, 122, 134, 139,
Medium (.30 - .49): items 34, 41, 54, 83, 55, 59, 124, 158
Large (.50 - .69): items 107, 162
XL (.70 - 1.0): none

Item 54:
Small (.10 - .29): items 29, 55, 59,
Medium (.30 - .49): items 34, 41, 46, 107, 162
Large (.50 - .69): item 83
XL (.70 - 1.0): none

Item 83:
Small (.10 - .29): items 29, 31, 55, 122, 124, 134, 158,
Medium (.30 - .49): items 34, 41, 46, 162, 139
Large (.50 - .69): items 54, 107
XL (.70 - 1.0): none

Item 107:
Small (.10 - .29): items 72, 29, 31, 55, 59, 122, 124, 134, 139, 158,
Medium (.30 - .49): items 34, 41, 54, 162
Large (.50 - .69): items 46, 83
XL (.70 - 1.0): none

Item 162:
Small (.10 - .29): items 29, 31, 59, 122, 134, 158,
Medium (.30 - .49): items 34, 41, 54, 83, 107, 55, 124, 139
Large (.50 - .69): item 46
XL (.70 - 1.0): none

Item 29:
Small (.10 - .29): items 34, 41, 46, 54, 83, 107, 162
Medium (.30 - .49): items 31, 59, 122, 134, 139, 258
Large (.50 - .69): items 55, 124
XL (.70 - 1.0): none

Item 31:
Small (.10 - .29): items 34, 41, 46, 83, 107, 162, 172
Medium (.30 - .49): items 29, 55, 59, 122, 124, 134, 139, 158
Large (.50 - .69): none
XL (.70 - 1.0): item 20

Item 55:
Small (.10 - .29): items 41, 54, 83, 107, 172
Medium (.30 - .49): items 34, 46, 162, 31, 59, 122, 134, 139, 158
Large (.50 - .69): items 29, 124
XL (.70 - 1.0): none

Item 59:

Small (.10 - .29): items 34, 41, 54, 83, 107, 162
Medium (.30 - .49): items 46, 29, 31, 55, 122, 124, 134, 139, 158
Large (.50 - .69): item 151
XL (.70 - 1.0): none

Item 122:
Small (.10 - .29): items 34, 41, 46, 83, 107, 162
Medium (.30 - .49): items 29, 31, 55, 59, 158
Large (.50 - .69): items 124, 134, 139
XL (.70 - 1.0): item 20

Item 124:
Small (.10 - .29): items 34, 41, 83, 107
Medium (.30 - .49): items 46, 162, 31, 59, 134, 139, 158
Large (.50 - .69): items 29, 55, 122
XL (.70 - 1.0): none

Item 134:
Small (.10 - .29): items 34, 41, 46, 83, 107, 162, 172
Medium (.30 - .49): items 29, 31, 55, 59, 124, 139, 158
Large (.50 - .69): item 122
XL (.70 - 1.0): item 20

Item 139:
Small (.10 - .29): items 34, 41, 46, 107
Medium (.30 - .49): items 83, 162, 29, 31, 55, 59, 124, 134, 158
Large (.50 - .69): items 122
XL (.70 - 1.0): none

Item 158:
Small (.10 - .29): items 34, 41, 83, 107, 162
Medium (.30 - .49): items 46, 29, 31, 55, 59, 122, 124, 134, 139
Large (.50 - .69): item 141
XL (.70 - 1.0): none

Middle Childhood

Item 34:
Small (.10 - .29): items 29, 31, 59, 122, 124, 134, 158,
Medium (.30 - .49): items 41, 46, 83, 107, 162, 55, 139
Large (.50 - .69): item 54
XL (.70 - 1.0): none

Item 41:
Small (.10 - .29): items 122, 134,
Medium (.30 - .49): items 34, 46, 54, 83, 107, 162, 29, 31, 55, 59,124, 139, 158
Large (.50 - .69): item 43
XL (.70 - 1.0): none

Item 46:
Small (.10 - .29): items 122,
Medium (.30 - .49): items 34, 41, 54, 83, 107, 162, 29, 31, 124, 139, 158
Large (.50 - .69): items 55
XL (.70 - 1.0): none

Item 54:
Small (.10 - .29): items 29, 31, 55, 59, 122, 124, 139, 158,
Medium (.30 - .49): items 41, 46, 83, 107, 162
Large (.50 - .69): item 34
XL (.70 - 1.0): none

Item 83:
Small (.10 - .29): items 29, 122, 124, 134, 158,
Medium (.30 - .49): items 34, 41, 46, 54, 31, 55, 59, 139

Large (.50 - .69): items 107, 162
XL (.70 - 1.0): none

Item 107:
Small (.10 - .29): items 29, 31, 55, 59, 122, 124, 134, 158,
Medium (.30 - .49): items 34, 41, 46, 54, 162, 139
Large (.50 - .69): item 83
XL (.70 - 1.0): none

Item 162:
Small (.10 - .29): items 29, 31, 122, 124, 158,
Medium (.30 - .49): items 34, 41, 46, 54, 107, 55, 59, 134, 139
Large (.50 - .69): item 83
XL (.70 - 1.0): none

Item 29:
Small (.10 - .29): items 34, 54, 83, 107, 162, 134, 139
Medium (.30 - .49): items 41, 46, 31, 59, 122
Large (.50 - .69): items 55, 124, 158
XL (.70 - 1.0): none

Item 31:
Small (.10 - .29): items 34, 54, 107, 162
Medium (.30 - .49): items 41, 46, 83, 29, 59, 122, 124, 134, 139, 158
Large (.50 - .69): item 55
XL (.70 - 1.0): none

Item 55:
Small (.10 - .29): items 54, 107
Medium (.30 - .49): items 34, 41, 83, 162, 122, 134, 139
Large (.50 - .69): items 46, 29, 31, 59, 124, 158
XL (.70 - 1.0): none

Item 59:
Small (.10 - .29): items 34, 54, 83, 107, 134, 139
Medium (.30 - .49): items 41, 46, 162, 29, 31, 122, 124
Large (.50 - .69): items 55, 158
XL (.70 - 1.0): none

Item 122:
Small (.10 - .29): items 34, 41, 46, 54, 83, 107, 162, 134
Medium (.30 - .49): items 29, 31, 55, 59, 124, 139, 158
Large (.50 - .69): item 20
XL (.70 - 1.0): none

Item 124:
Small (.10 - .29): items 34, 54, 83, 107, 162, 134
Medium (.30 - .49): items 41, 46, 31, 59, 122, 139
Large (.50 - .69): items 29, 55, 158
XL (.70 - 1.0): none

Item 134:
Small (.10 - .29): items 34, 41, 46, 83, 107, 29, 59, 122, 124, 158
Medium (.30 - .49): items 162, 31, 55, 139
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 139:
Small (.10 - .29): items 54, 29, 59
Medium (.30 - .49): items 34, 41, 46, 83, 107, 162, 31, 55, 122, 124, 134, 158
Large (.50 - .69): items 69
XL (.70 - 1.0): none

Item 158:
Small (.10 - .29): items 34, 54, 83, 107, 162, 134

Medium (.30 - .49): items 41, 46, 31, 122, 139
Large (.50 - .69): items 29, 55, 59, 124
XL (.70 - 1.0): none

Adolescents

Item 34:
Small (.10 - .29): items 41, 29, 31, 59, 122, 124, 134, 139, 158
Medium (.30 - .49): items 46, 54, 83, 107, 162, 55
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 41:
Small (.10 - .29): items 34, 31, 59, 134,
Medium (.30 - .49): items 46, 54, 83, 107, 162, 29, 55, 122, 124, 139, 158
Large (.50 - .69): items 43
XL (.70 - 1.0): none

Item 46:
Small (.10 - .29): items 29,
Medium (.30 - 49): items 34, 41, 54, 83, 107, 162, 31, 55, 59, 122, 124, 134, 139, 158
Large (.50 - .69): items 172
XL (.70 - 1.0): none

Item 54:
Small (.10 - .29): items 162, 29, 31, 122, 124, 134, 139, 158,
Medium (.30 - .49): items 34, 41, 46, 83, 107, 55, 59
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 83:
Small (.10 - .29): items 29, 31, 59, 124, 134, 158,
Medium (.30 - .49): items 34, 41, 46, 54, 162, 55, 122, 139
Large (.50 - .69): item 107
XL (.70 - 1.0): none

Item 107:
Small (.10 - .29): items 29, 31, 55, 59, 122, 124, 134, 158,
Medium (.30 - .49): items 34, 41, 46, 54, 139
Large (.50 - .69): items 83, 162
XL (.70 - 1.0): none

Item 162:
Small (.10 - .29): items 54, 31,
Medium (.30 - .49): items 34, 41, 46, 83, 29, 55, 59, 122, 124, 134, 139, 158
Large (.50 - .69): item 107
XL (.70 - 1.0): none

Item 29:
Small (.10 - .29): items 34, 54, 83, 107, 134
Medium (.30 - .49): items41, 46, 162, 31, 59, 122, 139, 158
Large (.50 - .69): items 55, 124
XL (.70 - 1.0): none

Item 31:
Small (.10 - .29): items 34, 41, 54, 83, 107, 162, 122, 124
Medium (.30 - .49): items 46, 29, 55, 59, 134, 139, 158
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 55:
Small (.10 - .29): item 107
Medium (.30 - .49): items 34, 41, 46, 54, 83, 162, 31, 59, 122, 134, 139, 158
Large (.50 - .69): items 29, 124
XL (.70 - 1.0): none

Item 59:

Small (.10 - .29): items 34, 41, 83, 107, 122
Medium (.30 - .49): items 46, 54, 162, 29, 31, 55, 124, 134, 139, 158
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 122:

Small (.10 - .29): items 34, 54, 107, 31, 59, 134
Medium (.30 - .49): items 41, 46, 83, 162, 29, 55, 124, 139, 158
Large (.50 - .69): item 20
XL (.70 - 1.0): none

Item 124:

Small (.10 - .29): items 34, 54, 83, 107, 31
Medium (.30 - .49): items 41, 46, 162, 59, 122, 134, 139
Large (.50 - .69): items 29, 55, 158
XL (.70 - 1.0): none

Item 134:

Small (.10 - .29): items 15, 34, 41, 54, 83, 107, 29, 122
Medium (.30 - .49): items 46, 162, 31, 55, 59, 124, 139, 158
Large (.50 - .69): none
XL (.70 - 1.0): none

Item 139:

Small (.10 - .29): items 34, 54
Medium (.30 - .49): items 41, 46, 83, 107, 162, 29, 31, 55, 59, 122, 124, 134
Large (.50 - .69): items 158
XL (.70 - 1.0): none

Item 158:

Small (.10 - .29): items 34, 54, 83, 107, 143
Medium (.30 - .49): items 41, 46, 162, 29, 31, 55, 59, 122, 134
Large (.50 - .69): items 124, 139
XL (.70 - 1.0): none

Appendix G. Multidimensional Assessment of Parenting Scale (MAPS)

Instructions:

Parents have different ways of trying to raise their children. Please read each statement and rate how much each one best describes your parenting during the **past two months** with the child indicated above.	**Never**	**Almost Never**	**Sometimes**	**Often**	**Always**
1. I express affection by hugging, kissing, and holding my child.	1	2	3	4	5
2. If my child whines or complains when I take away a privilege, I will give it back	1	2	3	4	5
3. I am afraid that disciplining my child for misbehavior will cause her/him to not like me.	1	2	3	4	5
4. I argue with my child.	1	2	3	4	5
5. I use threats as punishment with little or no justification.	1	2	3	4	5
6. The punishment I give my child depends on my mood.	1	2	3	4	5
7. I have warm and intimate times together with my child.	1	2	3	4	5
8. I yell or shout when my child misbehaves	1	2	3	4	5
9. My child talks me out of punishing him/her after he/she has done something wrong	1	2	3	4	5
10. I show respect for my child's opinions by encouraging him/her to express them.	1	2	3	4	5
11. If my child does his/her chores, I will recognize his/her behavior in some manner.	1	2	3	4	5
12. I let my child out of a punishment early (like lift restrictions earlier than I originally said).	1	2	3	4	5
13. I explode in anger toward my child.	1	2	3	4	5
14. I spank my child with my hand when he/she has done something wrong.	1	2	3	4	5
15. I give reasons for my requests (such as "We must leave in five minutes, so it's time to clean up.")	1	2	3	4	5

	Never	Almost Never	Sometimes	Often	Always
16. I lose my temper when my child doesn't do something I ask him/her to do.	1	2	3	4	5
17. I encourage my child to talk about her/his troubles.	1	2	3	4	5
18. If I give my child a request and she/he carries out the request, I praise her/him for listening and complying.	1	2	3	4	5
19. I warn my child before a change of activity is required (such as a five-minute warning before leaving the house in the morning).	1	2	3	4	5
20. If my child gets upset when I say "No," I back down and give in to her/him.	1	2	3	4	5
21. My child and I hug and/or kiss each other.	1	2	3	4	5
22. I listen to my child's ideas and opinions.	1	2	3	4	5
23. I feel that getting my child to obey is more trouble than it's worth.	1	2	3	4	5
24. I spank my child when I am extremely angry.	1	2	3	4	5
25. I use physical punishment as a way of disciplining my child.	1	2	3	4	5
26. If my child cleans his room, I will tell him/her how proud I am.	1	2	3	4	5
27. I give in to my child when she/he causes a commotion about something.	1	2	3	4	5
28. I tell my child my expectations regarding behavior before my child engages in an activity.	1	2	3	4	5
29. When I am upset or under stress, I am picky and on my child's back.	1	2	3	4	5
30. I tell my child that I like it when he/she helps out around the house.	1	2	3	4	5
31. I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked.	1	2	3	4	5
32. I provide my child with a brief explanation when I discipline his/her misbehavior.	1	2	3	4	5
33. I avoid struggles with my child by giving clear choices.	1	2	3	4	5
34. When my child misbehaves, I let him know what will happen if she/he doesn't behave.	1	2	3	4	5

Appendix H. MAPS scoring

Proactive Parenting: MAPS_PP=SUM(MAPS_15, MAPS_19, MAPS_28, MAPS_32, MAPS_33, MAPS_34).

Positive Reinforcement: MAPS_PR=SUM(MAPS_11, MAPS_18, MAPS_26, MAPS_30).

Warmth: MAPS_WM=SUM(MAPS_1, MAPS_7, MAPS_21).

Supportiveness: MAPS_SP=SUM(MAPS_10, MAPS_17, MAPS_22).

Hostility: MAPS_HS=SUM(MAPS_4, MAPS_5, MAPS_6, MAPS_8, MAPS_13, MAPS_16, MAPS_29).

Lax Control: MAPS_LC=SUM(MAPS_2, MAPS_3, MAPS_9, MAPS_12, MAPS_20, MAPS_23, MAPS_27).

Physical Control: MAPS_PC=SUM(MAPS_14, MAPS_24, MAPS_25, MAPS_31).

Broadband Positive Parenting: MAPS_POS=SUM(MAPS_PP, MAPS_PR, MAPS_WM, MAPS_SP).

Appendix I: Grade Level Analysis

Website https://readability-score.com/

"A grade level (based on the USA education system) is equivalent to the number of years of education a person has had. A score of around 10-12 is roughly the reading level on completion of high school. Text to be read by the general public should aim for a grade level of around 8."

Readability was calculated for each of the following measures which were then averaged for the final grade level.

Flesch-Kincaid Grade Level

$$0.39\left(\frac{\text{total words}}{\text{total sentences}}\right)+11.8\left(\frac{\text{total syllables}}{\text{total words}}\right)-15.59$$

Gunning-Fog Score

$$0.4\left[\left(\frac{\text{words}}{\text{sentences}}\right)+100\left(\frac{\text{complex words}}{\text{words}}\right)\right]$$

Coleman-Liau Index $CLI = 0.0588L - 0.296S - 15.8$

L is the average number of letters per 100 words and S is the average number of sentences per 100 words.

SMOG Index

$$\text{grade} = 1.0430\sqrt{\text{number of polysyllables} \times \frac{30}{\text{number of sentences}}}+3.1291$$

Automated Readability Index

$$4.71\left(\frac{\text{characters}}{\text{words}}\right)+0.5\left(\frac{\text{words}}{\text{sentences}}\right)-21.43$$

Each item is followed by the average grad level in bold.

22. I express affection by hugging, kissing, and holding my child. **8.4**

29. If my child whines or complains when I take away a privilege, I will give it back. **4.9**

31. I am afraid that disciplining my child for misbehavior will cause her/him to not like me. **8.9**

34. I argue with my child. **1.1**

41. I use threats as punishment with little or no justification. **9.9**

46. The punishment I give my child depends on my mood. **5.6**

54. I yell or shout when my child misbehaves. **5.4**

55. My child talks me out of punishing him/her after he/she has done something wrong. **7.9**

58. If my child does his chores, I will recognize his/her behavior in some manner. **8.1**

59. I let my child out of a punishment early (like lift restrictions earlier than I originally said). **11.6**

60. I have warm and intimate times together with my child. **7.9**

79. I show respect for my child's opinions by encouraging him/her to express them. **8.4**

83. I explode in anger toward my child. **3.4**

90. I spank my child with my hand when he/she has done something wrong. **5.6**

97. I give reasons for my requests (such as "We must leave in five minutes, so it's time to clean up.") **5.3**

107. I lose my temper when my child doesn't do something I ask him/her to do. **5.1**

108. I encourage my child to talk about her/his troubles. **4.4**

109. If I give my child a request and she/he carries out the request, I praise her/him for listening and complying. **8.1**

124. If my child gets upset when I say “No,” I back down and give in to her/him. **3.3**

133. My child and I hug and/or kiss each other. **1.7**

139. I feel that getting my child to obey is more trouble than it’s worth**. 4.1**

140. I spank my child when I am extremely angry. **5.0**

144. I warn my child before a change of activity is required (such as a five-minute

warning before leaving the house in the morning). **9.5**

153. I use physical punishment as a way of disciplining my child. **9.8**

157. If my child cleans his room, I will tell him/her how proud I am. **2.8**

158. I give into my child when she/he causes a commotion about something. **8.1**

161. I tell my child my expectations regarding behavior before my child engages in an activity. **12.6**

162. When I am upset or under stress, I am picky and on my child's back. **3.4**

165. I tell my child that I like it when he/she helps out around the house. **3.6**

169. I listen to my child's ideas and opinions. **5.0**

171. I avoid struggles with my child by giving clear choices. **5.2**

176. When my child misbehaves, I let him know what will happen if she/he doesn't behave. **6.5**

177. I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked. **12.8**

178. I provide my child with a brief explanation when I discipline his/her misbehavior. **11.1**

Average = 6.6