

## Differential Contributions of Three Parenting Dimensions to Preschool Literacy and Social Skills in a Middle-Income Sample

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This study investigated parenting practices among families of preschoolers in a middle-income community, as well as the contributions of these practices to children's literacy and learning-related social skills. A total of 229 families of preschoolers were recruited. Parents completed a survey describing their parenting practices, while children's literacy skills were directly assessed by using standardized measures. Parents also reported on children's social development. Factor analyses supported a three-dimensional structure of parenting including the home learning environment, autonomy support/expectations, and management/discipline. Path models showed that the home learning environment predicted literacy skills; specifically, parents' teaching about letters and sounds was associated with alphabet knowledge, while shared book reading was marginally linked to vocabulary. Management/discipline was uniquely related to self-regulation, while cooperative/compliant skills were associated with the home learning environment, support/expectations, and management/discipline. Findings suggested that parenting could be conceptualized as three relatively independent dimensions, each of which demonstrated domain-specific contributions to early literacy and social skills.

An estimated 25% to 35% of American schoolchildren do not meet the national objective of *basic proficiency* in reading by fourth grade

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(National Center for Education Statistics [NCES], 2010). Reading difficulty often can be traced to a lack of preparation as early as preschool (Lee & Burkam, 2002). Indeed, many children enter kindergarten without the knowledge of letters and sounds that support decoding; the vocabulary that facilitates comprehension (Teale & Sulzby, 1986); or the learning-related social skills, such as self-control and cooperation/compliance, that help them take advantage of literacy instruction (McClelland, Acock, & Morrison, 2006; McClelland & Morrison, 2001; McClelland, Morrison, & Holmes, 2000). Parents are widely recognized as children's first teachers, providing cognitive and affective input that helps children build these literacy-related skills (Barber, Stolz, & Olsen, 2005; Sénéchal & Le Fevre, 2002; Weigel, Martin, & Bennett, 2006). Yet, our understanding of how parents matter in early learning is incomplete; we have yet to examine multiple facets of parents' academic and affective influence in connection with each of these early literacy and social outcomes so as to tease apart precisely which parenting practices contribute to which emergent reading competencies. The present study took this comprehensive but specific approach, mapping out the unique connections among three distinct aspects of parenting and five reading-related child outcomes in the preschool year.

### *Key Research Findings About Parenting and Early Literacy and Social Skills*

Scattered sets of studies have individually identified many ways in which parents' cognitive and affective stimulation contributes to children's success in literacy-related skills, including alphabet and phonological knowledge, word decoding, vocabulary skills, self-regulation, cooperation, and compliance. Research has converged upon three primary dimensions of parenting: academically oriented materials and activities of the home learning environment (HLE); warmth and interest toward children, support for their autonomy, and expectations for appropriate behaviors (WSE); and management and discipline of children's behavior (MD).

Certainly, these three aspects of parenting are intertwined in the daily reality of family life. For example, during the typical bedtime-story reading, parents might talk about the words and ideas or the print of the book (HLE). At the same time, they might demonstrate affection and encourage children to voice their own views (WSE). And, throughout the interaction, parents would likely enforce the appropriate taking of turns in conversation (MD). Because these aspects of parenting are interwoven and co-occurring, the unique role of each strand in promoting one or more of the

early language, literacy, and social underpinnings of reading is best understood when considering it within a comprehensive model that includes the other aspects of parenting, as well.

*Cognitive facets of parenting: Home learning environment.* Broadly defined, the *home learning environment* includes the resources, whether material or interpersonal, to which children have access that can foster their learning about critical content (Bradley, 2002; Evans, Shaw, & Bell, 2000). There is emerging evidence that the HLE may support language and literacy skills in domain-specific ways; in other words, children seem to learn the specific content that parents present. For example, books and book reading, which expose children to words and ideas outside of their daily experiences, are among the most influential tools for expanding children's vocabulary (Bradley, Caldwell, & Corwyn, 2003; Dickinson & Tabors, 2001; Evans et al., 2000; Neuman, 1999; Sénéchal, 2006). Conversations between children and their parents, siblings, and other caregivers also enhance language and vocabulary (Hart & Risley, 1995), as well as grammar and syntax (Hoff, 2000). Similarly, out-of-home opportunities including visits to libraries or attractions such as zoos and museums can foster language skills, likely because of the conversations they afford (Neuman & Celano, 2001, 2004; Paris, Yambor, & Packard, 1998; Tenenbaum, Rappolt-Schlichtmann, & Zanger, 2004).

Book reading can foster children's knowledge of letters and sounds if this content is a focus of the reading (Hindman, Connor, Jewkes, & Morrison, 2008; Justice & Ezell, 2002). However, other code-focused materials, including workbooks, flashcards, educational media, and toys or games, are generally more closely linked to these skills (Moreno, 2002; Sénéchal, 2006). Consequently, we examined relations between HLE and children's early letter, decoding, and vocabulary skills, with a focus on possible content-specific relations (e.g., language-focused activities and vocabulary, code-focused activities, and code-related skills). We also examined the largely unexplored possibility that parents' home-based activities would serve as forums for children to practice social competence, including self-regulation and cooperation/compliance, as they require children to employ joint attention and engage in productive collaboration.

*Affective dimensions of parenting.* Two broad affective dimensions—warmth, autonomy support, and expectations (WSE), and management and discipline (MD)—have a complex history in parenting research (Freud, 1989; Spock, 1946). Initially considered opposite poles of the same spectrum, modern work has conceptualized these constructs as separate but interconnected (Baumrind, 1971; Darling & Steinberg, 1993; Maccoby & Martin, 1983).

WSE represents parents' recognition and appreciation of children's own skills, desires, and demands, as well as their efforts to support and shape children's development as individuals who can function appropriately within society (Baumrind, 1971; Boyer, 2009; Phillips & Lonigan, 2010). This aspect of parenting has been studied from several distinct perspectives. One body of work has explored affective *warmth*, evidenced by open displays of affection such as hugging and positive reinforcement such as providing praise and compliments (Baldwin, 1955; Schaefer, 1959). Other work has privileged parents' support for children's *autonomy* through inviting children's participation in decision making and problem solving and supporting children's independent assessment and exploration of the world (Grolnick & Farkas, 2002; Grolnick & Ryan, 1987, 1989). A third facet involves *expectations*, or values, for children's behaviors that constrain how this autonomy should be enacted (Fuller & García Coll, 2010; Rodriguez et al., 2009; Zhang & Fuglini, 2006). For example, many middle-class American families expect children to attend to teachers and other authority figures, to share with peers, and to respect the space and property of those around them (Boyer, 2009; Domenech-Rodríguez, Donovick, & Crowley, 2009).

In general, data suggest that when parents provide greater nurturing, expressions of children's value, and guidance toward independence and integration into the broader culture, children develop stronger self-regulation and cooperation/compliance (Dennis, 2006; Landry, Swank, Smith, Assel, & Gunnewig, 2006; Thompson & Meyer, 2007; Volling, Blandon, & Gorvine, 2006). This link might emerge because parents' WSE helps children to successfully manage their own attention, emotion, and behavior. In addition, positive parent-child exchanges might model how children could positively engage with others. That said, both of these mechanisms imply that parents are employing at least some management or rule setting, as well, suggesting that analyses of parenting and social outcomes should include both WSE and MD to determine precisely how each facet of parenting matters for development.

There is also evidence that children whose parents demonstrate higher WSE develop better language and other cognitive skills; however, this relation might emerge at least in part because parents who are more emotionally engaged with children are more able and/or inclined to provide home learning opportunities (Bornstein & Tamis-LeMonda, 1989; Hirsh-Pasek & Burchinal, 2006; Tamis-LeMonda & Bornstein, 2002). Alternatively, some work indicates a different, indirect pathway such that WSE supports social skills, which in turn predict academic development (Walker & MacPhee, 2011). Thus, analyses of WSE and child outcomes

should include all aspects of parenting (HLE and MD) and both social and academic skills.

MD reflects the structure of the parent-child relationship and are characterized by the creation, explanation, and enforcement of rules and regulations (Baumrind, 1971; Grolnick & Ryan, 1989). The term *management* signals proactive monitoring and ongoing shaping of children's behavior, whereas *discipline* indicates a corrective response to a transgression.

Study of these constructs has been heavily influenced by Baumrind's demonstrations that that children of authoritative (high support, high control) parents fared better than peers exposed to other combinations of parenting practices. In particular, these children were more independent, self-controlled, curious about the world, and happy (Baumrind, 1971, 1972; Maccoby & Martin, 1983). Research has generally supported these findings (Eisenberg et al., 1992; Estrada, Arsenio, Hess, & Holloway, 1987; Patterson, DeGarmo, & Knutson, 2000; Stormshak et al., 2000). Indeed, how parents communicate WSE while delivering consequences for a transgression impacts how children construe their own behaviors and the norms of their world (Deater-Deckard, Ivy, & Petrill, 2006; Dodge, McLoyd, & Lansford, 2005). Thus, MD can help children internalize target behaviors (e.g., self-regulation, cooperation/compliance) in a manner than respects their individuality, but it should be considered in concert with WSE, which not all prior work on parenting has done.

### *Unanswered Questions Regarding Relations Between Parenting and Early Skills*

As just detailed, the parenting literature has established that three critical aspects of parenting, although theoretically distinct, may be interconnected and overlapping, woven together in the quotidian activities of child rearing. However, questions remain about how each, accounting for the others, is uniquely predictive of social and cognitive facets of emergent reading. The theoretical and empirical literatures have traditionally focused *either* on the HLE (see Evans et al., 2000; Sénéchal, 2006) *or* on one or more aspects of WSE and MD (Baumrind, 1971). A more comprehensive model examining all three dimensions might reveal that they cohere such that parents providing a rich HLE would also exert high support and high MD; in this event, all dimensions should similarly predict literacy and social outcomes. Alternatively, dimensions of parenting might be independent, which could engender a more mosaic pattern of influences.

To date, some work has begun to develop such a comprehensive model, with inconsistent results (e.g., Brooks-Gunn & Markman, 2005; Linver,

Brooks-Gunn, & Cohen, 2002). For example, Morrison and Cooney (2002) examined a constellation of 50 parenting practices among families of kindergarteners from ethnically and socioeconomically diverse households. Parenting practices reliably clustered into several dimensions, with three—the HLE, WSE, and MD—most directly predicting child outcomes. The HLE predicted a composite of literacy skills, as did the WSE construct. Neither WSE nor MD was linked to social skills, perhaps because some key variables reflecting consistent discipline did not ultimately cohere with any aspects of parenting. In addition, Linver and colleagues (2002) conducted a similar study using broader dimensions of parenting and child outcomes. Like Morrison and Cooney, they found a relation between cognitive stimulation and cognitive skills but also detected a link between affective stimulation and both cognitive and social skills.

Thus, promising recent studies have advanced our understanding of parenting as a multifarious construct with complex and selective links to child outcomes, but the results are something of a patchwork. One remaining frontier (and possible explanation for previous inconsistent findings) involves replacing composite literacy variables with more specific measures of code and vocabulary skills, and exchanging composite social outcomes for specific measures of self-regulation and cooperation/compliance. Models including multiple dimensions of parenting and multiple, domain-specific measures of child outcomes may provide the best opportunity to map out the links between parenting and early literacy-related skills and, by extension, set the stage for causal analyses that would help parents better prepare young children to learn to read. The current study thus builds on this small but emerging literature by measuring all three distinct dimensions of parenting and then advances the field by linking these multiple dimensions to a very specific series of child language, literacy, and social outcomes (as opposed to the broader composites employed by Morrison and Cooney [2002] and Linver et al. [2002]).

Finally, parenting behaviors and their effects on child outcomes may differ with social background factors such as parents' employment, particularly if their work schedules are so burdensome as to reduce opportunities for home involvement (Berger, Brooks-Gunn, Paxson, & Waldfogel, 2008; Iruka, 2009). In addition, parenting practices might vary with child age and gender, although the effects of these factors are uncertain (Brophy-Herb et al., 2009; Moilanen, Shaw, Dishion, Gardner, & Wilson, 2010). In contrast, the role of age and gender in child outcomes is better established, with early advantages in language, literacy, and social skills often observed among older children and girls (Brophy-Herb et al., 2011; Hindman, Skibbe, Miller, & Zimmerman, 2010). Thus, the current study examines

these three variables (e.g., parent employment, child age, child gender) as covariates in both parenting and child outcomes.

There has been much examination of how parenting varies across ethnic groups (Brooks-Gunn & Markman, 2005; Carlson, Uppal, & Prosser, 2000; Chao, 2001; García Coll, 1990). However, some past research has confounded ethnicity and socioeconomic status (SES), and recent work suggests that the latter may explain more variation in parenting than the former (Hill, 2001; Hill & Craft, 2003). Thus, we recruited a relatively homogeneous, middle-SES sample (controlling for any remaining differences by using parent education as a covariate) and accounted for ethnicity within this middle-SES sample.

### *Research Questions and Hypotheses*

We investigated three primary research questions. First, to what degree do three dimensions of parenting—the HLE, WSE, and MD—characterize parenting in a preschool sample? Using the Parenting Questionnaire (Morrison & Cooney, 2002), all three dimensions were expected to emerge in a factor analysis, and parents were expected to differ from each other on all three dimensions.

Second, within this middle-income sample, how are dimensions of parenting related to key social and demographic background variables? Drawing on prior literature, we expected relatively few associations in this middle-income sample between parents' education or ethnicity and the three dimensions of parenting or the child outcomes, but we anticipated potential relations between child gender, child age, and parent employment and both parenting and outcomes.

Finally, accounting for these background factors in this middle-income sample, how do these dimensions of parenting relate to children's early literacy and learning-related social skills? In light of the patchwork nature of prior work on this particular question, paths between all three parenting dimensions and all (three) literacy and (two) social outcomes were tested.

## Method

### *Procedures*

Families were recruited into the Pathways to Literacy project, a study of literacy development, in the fall of children's preschool year. Although the Pathways project was a longitudinal undertaking following children from preschool through second grade, the current study featured cross-sectional

parenting and child outcome data collected only in the spring of the preschool year. Researchers visited parents at district Back to School nights and explained the objectives and logistics of the project. As an incentive for enrollment, parents were offered a \$20 gift card for a local bookstore. Parents were given consent forms and business-reply envelopes and asked to mail the forms to the project office if they chose to participate.

Children's language and literacy skills were assessed in the spring (April and May) of the academic year. Trained assessors individually evaluated children in their schools for approximately 20 minutes over 2 consecutive days. In the spring or early summer (April through July), families received a 1-hour home visit, and parents were administered the packet of questionnaires at its conclusion. The experimenter gave parents a paper form of the Social Skills Rating System–Parent Version (SSRS) questionnaires, as well as several other surveys and several business reply envelopes. The questionnaires required approximately 30–40 minutes to complete. Upon receipt of the questionnaires, parents were issued the gift card.

Overall, 310 families (about 50% of all eligible preschool families) enrolled in the larger Pathways study. In total, 74% of these families ( $N = 229$ ) returned the Parenting Questionnaire and are included in the current study. In most cases ( $n = 224$ ), mothers completed the forms. Families who did and did not return the Parenting Questionnaire were no different on child gender, language, literacy, social skills, or child age at time of administration of questionnaires.

### *Participants*

Across the 229 children enrolled in the study, the mean age in the spring (when parenting data were collected) was 4.37 years ( $SD = .52$  years), ranging 3.36–5.19 years. About half of preschoolers were in a prekindergarten or kindergarten-bound program, meaning that they were between the ages of 4 and 5 preparing for kindergarten in the following year. The remaining half of the sample were completing their first year of preschool and likely to spend the following year in a prekindergarten classroom. Girls comprised 50% of participants. The majority (80%) of children in the sample were White, 10% were African American, 5% were Asian, 3% were Arab American, and 2% were Hispanic/Latino. Given the fairly small numbers of families from each ethnic minority group, we created a dichotomous (White vs. minority) variable. Critically, families of minority ethnicity, including those of Hispanic/Latino and African American backgrounds, varied in their levels of education rather than falling predominantly on the lower end of the education (and likely SES) spectrum.

Families resided in two middle-class towns on the fringe of a major Midwestern city.

Nearly all children ( $n = 227$ ) resided in two-parent households, with the fathers in all but one family reporting full-time employment. One third of the mothers did not work outside of the home, one third held part-time jobs (between 10 and 30 hours per week), and the remaining third reported full-time employment (more than 30 hours per week). Mothers had a mean age of 35.66 years ( $SD = 4.63$ ), with a range of 24–46 years; fathers had a mean age of 38.92 years ( $SD = 4.98$ ). On average, both mothers and fathers reported having 16 years of education, equivalent to a bachelor's degree, with a range from 10 (less than a high school degree) to 18 or more (graduate or professional degree). In total, 71 mothers (or 35% of the sample) held graduate degrees. All families spoke English in the home and completed questionnaires in English, and all children were assessed in English; however, eight families spoke other languages, as well, and were raising children to be bilingual.

### *Measures*

*Parent background questionnaire.* Parents completed a brief questionnaire about social and demographic characteristics of their households/families, including home language, child gender and ethnicity, current maternal and paternal employment status (i.e., full-time, part-time, or not employed), and highest level of education attained by both the mother and father. Completion of the 20-item questionnaire required approximately 5 minutes.

*Parenting questionnaire.* Parents completed a questionnaire about their parenting beliefs and practices (Morrison & Cooney, 2002) that was designed to tap three primary dimensions of parenting: the HLE, WSE, and MD. Previous research using diverse samples of kindergarten children (see Morrison & Cooney, 2002) demonstrated Cronbach's alpha reliabilities for the scales of .75, .81, and .91, respectively. The Parenting Questionnaire included 50 items, examples of which are listed in Table 1 but described in detail in the Results section of this article. In brief, 43 of these items asked parents to rate the degree to which a given behavior described their parenting, from 1 = not at all like me to 5 = very much like me. The remaining 7 items pertained to the home environment and asked parents to report a raw number, either of materials (e.g., books, newspapers) they had in the home or of hours children spent engaged in particular activities in a given week (e.g., using academically oriented computer programs, watching educational or other television programs). The Parenting Questionnaire required approximately 15 minutes to complete.

**Table 1.** Factor loadings of parenting questionnaire items

Parenting questionnaire item	Factor loading
<i>Home learning environment</i>	
Frequency of teaching child letter sounds	.84
Frequency of teaching child letter names	.76
Frequency of teaching child to read words	.71
I encourage child to write	.70
I encourage child to do math-related activities	.59
I provide child with math workbooks	.54
I play number games with child	.41
<i>Autonomy support/expectations</i>	
I respect child's opinion	.71
I encourage child to explore and question things	.68
I encourage child to talk to me about his/her feelings	.57
I find it important for child to be considerate of others	.56
I find it interesting and educational to spend time with my child	.52
I find it important for child to be responsible	.46
<i>Management/discipline</i>	
Once I decide how to deal with misbehavior, I follow through	.86
I have little or no difficulty sticking with rules for my child	.67
I never threaten discipline unless sure I will carry it out	.64
When a lot of time passes after my child misbehaves, I just let it go	.32

*Child academic skills.* Basic letter-recognition skills were assessed using alphabet flash cards. Children were shown each lowercase letter of the alphabet in random order, one at a time, and asked to name each one. The assessment was untimed. Decoding was assessed using the Letter-Word subtest of the Woodcock-Johnson Tests of Achievement III (Woodcock, McGrew, & Mather, 2001). The Woodcock-Johnson III Picture Vocabulary subtest (WJIII-PV) tapped expressive vocabulary. Test-retest and split-half reliability exceed .90 for both WJIII subtests. Standardized scores with a mean of 100 and standard deviation of 15 were used in analyses.

*Child social skills.* To assess children's social skills, parents completed the Social Skills Rating System—Parent Version (SSRS; Gresham & Elliott, 1990), which included 50 items in which parents were asked to rate their agreement with statements, such as "My child is easily distracted," on a scale from 0 (not at all like my child) to 2 (often true). The measure includes four subscales for preschool children, and this study investigated the cooperation/compliance and self-control subtests that tap learning-related social skills. Split-half and test-retest reliabilities for the subscales exceeded .90. Return rates were identical to those for the background questionnaire.

### *Missing Data*

Missing family and child data in the spring of the preschool year were minimal. In all, 30 families (about 13% of the sample) were missing data on at least one item from the background questionnaire, whereas 22 children (10% of the sample) were missing at least one WJIII academic skill measure and 20 (9% of the sample) were missing alphabet data. Only 15 children (7% of the sample) were missing any SSRS data. Children missing background questionnaire data were slightly more likely to be missing academic skill data ( $r = .32, p < .001$ ), but otherwise no patterns of missing data were apparent; children with missing data did not differ from those with complete data on minority ethnicity, maternal education, or age, nor on any of the literacy and social measures. Missing data were imputed by using single imputation methods because the amount of missing data was small, variables ultimately trimmed from the path model could be included in the imputation, and parameter estimation and model replication are straightforward (Allison, 2001; Widaman, 2006). Using the regression-based algorithms in Stata (a statistical software package from StataCorp), missing data were imputed for each variable, drawing on all other observed variables. Resulting means and standard deviations for variables were equivalent to those of the original data.

## Results

### *Question 1*

Our first research question involves examining how these three dimensions of parenting characterized parenting among families of preschoolers. We first describe our analytic strategy for this question and then present the findings.

*Analytic strategy.* To explore the dimensions of parenting among families of preschoolers, we conducted factor analysis using the Employment Qualification Support (EQS) program (Bentler, 1995). Factor analysis enables empirical examination of the relations between one or more observed indicators (e.g., playing math games) and an underlying construct that it might reflect (e.g., math instruction). In addition, a latent-variable framework enables the modeling of measurement error attendant to individual indicators, thus providing a more precise estimate of factor loadings than do principal components methods. Finally, factor analyses using structural equation software provide overall indices of fit, revealing the degree to which relations posited in the model actually mirror the relations among

the variables in the raw data. Zero-order correlations between variables in the current study are listed in Table 2.

Based upon previous findings with the Parenting Questionnaire (Morrison & Cooney, 2002) and the body of research discussed earlier (e.g., Baumrind, 1991; Britto, Brooks-Gunn, & Griffin, 2006; Linver et al., 2002), we tested a three-factor solution, including the HLE, WSE, and MD. Given the sample size ( $N = 229$ ) and the number of items hypothesized to load onto each factor ( $n = \text{ca. } 15$ ), we did not have sufficient statistical power to model all three factors with all related items in the same model. Instead, we first modeled each factor by itself, with all of the questionnaire items hypothesized to load onto that factor included as indicators of the latent construct (thus creating three separate one-factor models). In our second step, we returned to each of these three (one-factor) models to trim (or remove) survey indicator items with nonsignificant loadings and/or loadings lower than .32 (Comrey & Lee, 1992). As each of these variables was removed, one by one, we checked to ensure that the overall chi-square of each model decreased or remained the same, indicating that the more parsimonious model (without the variable in question) was an equal or better fit to the data. Finally, in our third step, we combined all three streamlined factors and their attendant items (now reduced in number, after the trimming process of the previous step) into a single model.

*Findings.* The final model revealed that a three-factor solution was a good fit to the data: Nonnormed Fit Index (NNFI) = .92, Comparative Fit Index (CFI) = .93, root mean square error of approximation (RMSEA) = .05. Although the chi-square value was significant, ( $df = 116$ ) = 193.93,  $p < .001$ , this is not unusual given the sample size; hence, we confirmed that the ratio of the chi-square to the degrees of freedom was lower than 3, as suggested by Kline (2004). Since our data met this ratio, we were satisfied with model fit.

Factor loadings are listed in Table 1. In brief, we found that seven academic instruction-related items loaded onto the first factor, including four focused on code (e.g., teaching about the names and sounds of letters) and three related to math (e.g., playing number games and using math workbooks). Loadings among these items ranged from .41 to .84.

The second factor was comprised of six items related to autonomy support (e.g., "I encourage my child to explore and to question things") and expectations (e.g., "I find it important for my child to be considerate of others"). Notably, most families reported high self-ratings on items more directly reflecting warmth (e.g., "I have warm, intimate moments with my child"); consequently, these items did not load onto this or any other factor. Overall, this WSE factor primarily reflected respect for children's

individuality and expectations for appropriate conduct in society at large. Loadings among these six items ranged from .46 to .71.

Finally, four items served as indicators of the MD factor, such as “I never threaten to discipline my child unless I am sure I will carry it out” and “When a lot of time passes after my child misbehaves, I just let it go.” In particular, items carried a valence of providing consistent guidance and consequences for misbehavior. Loadings for most items ranged from .64 to .86, although one reverse-coded item (“When a lot of time passes after my child misbehaves, I just let it go”), with a borderline loading of .32, was retained because of its theoretical significance for the factor and, in an effort to minimize capitalization on chance, its higher loading in previous research using this measure (Morrison & Cooney, 2002).

The seven free-response items related to the number of materials in the home (e.g., newspapers) or hours spent engaged in various activities (e.g., watching television) were included in preliminary models. However, after rescaling these variables in several ways, including mean-split groups, terciles, quartiles, and stanines, results still suggested that these items did not, either in raw form or in any of these arrangements, load onto any factor.

Variability on the three dimensions was investigated by calculating a mean score, adjusted for factor loadings of items, for each family on each factor and then exploring dispersion of these factor means across families; results are summarized in Table 3. Although weighted means were used in subsequent analyses, descriptive statistics of parents' raw (i.e., unweighted by factor loadings) responses on the Parenting Questionnaire are somewhat more straightforward to interpret. Parents varied substantially from one another on their responses to HLE-related items ( $M = 3.60$ ,  $SD = .82$ , range = 1.50–5.00). Similarly, parents varied on their responses to MD items ( $M = 3.97$ ,  $SD = .62$ , range = 2.25–5.00). Responses on both of these factors were normally distributed. However, variability in parents' self-evaluation on the WSE dimension was more constrained ( $M = 4.70$ ,  $SD = .36$ , range = 3.33–5.00). Moreover, responses were skewed toward the high end of the distribution, with approximately 33% of families reporting a score of 5 on all relevant items. To avoid violating normality assumptions, subsequent analyses employed a dichotomous mean split of this variable.

In addition, although one item reflecting the frequency of parents' shared book reading with children did not load onto the HLE factor, recent work suggests that book reading is an important aspect of children's learning at home and has a reliable association with language and particularly with vocabulary skills (Evans et al., 2000; Sénéchal & Cornell, 1993; Sénéchal, LeFevre, Thomas, & Daley, 1998). Thus, we included this book-reading-frequency item as a fourth parenting-related predictor to investigate

**Table 2.** Pearson *r* correlation matrix between predictors, outcomes, and sociodemographic variables

	2	3	4	5	6	7
1. HLE	.39***	.17**	.32***	.23**	.18**	.04
2. WSE	1	.20**	.14*	-.03	.02	-.02
3. MD		1	.09	.07	.09	.01
4. Book reading			1	.07	.24***	.20**
5. ABC				1	.52**	.15*
6. WJIII-LW					1	.32***
7. WJIII-PV						1
8. SSRS self-control						
9. SSRS cooperation						
10. Child age						
11. Family ethnicity						
12. Maternal education						
13. Father education						
14. Maternal employment						

*Note.* ABC = alphabet recognition; HLE = home learning environment; MD = management/discipline; SSRS = Social Skills Rating System-Parent Version; WJIII-LW = Woodcock-Johnson III Letter-Word subtest; WJIII-PV = Woodcock-Johnson III Picture Vocabulary subtest; WSE = autonomy support/expectations.

†*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

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8	9	10	11	12	13	14
.15*	.28***	.02	.10	.11	.15*	.11
.17*	.33***	-.09	.03	-.03	.07	.08
.22***	.25***	-.03	.02	-.06	-.02	-.04
.08	.07	-.23**	.25***	.21**	.24***	.07
.01	.14*	.42***	-.01	.15*	.17*	.05
.10	.17*	-.27***	-.02	.14*	.16*	.10
.10	.06	-.05	.20**	.17†	.14*	-.09
1	.53***	-.09	.15*	.14*	.19**	-.02
	1	-.01	.05	.10	.08	.08
		1	-.04	.02	.05	-.07
			1	.20**	.13*	.17**
				1	.35***	.27***
					1	-.09
						1

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**Table 3.** Descriptive statistics for predictor and outcome variables

Variable	<i>M</i>	<i>SD</i>	Min.	Max.
Home learning environment, unweighted	3.60	.82	1.50	5.00
Home learning environment, weighted	2.39	.55	.99	3.26
Autonomy support/expectations, unweighted	4.70	.36	3.33	5.00
Autonomy support/expectations, weighted	2.73	.22	1.91	2.93
Management/discipline, unweighted	3.97	.62	2.25	5.00
Management/discipline, weighted	2.51	.38	1.37	3.61
Book-reading frequency	4.46	.82	2.00	5.00
Alphabet knowledge	14.81	7.80	0	26.00
WJIII Letter-Word	120.00	18.54	76.00	220.00
WJIII Picture Vocabulary	113.41	10.60	74.00	148.00
SSRS self-control	14.12	2.56	5.00	20.00
SSRS cooperation	13.40	2.55	3.00	19.00

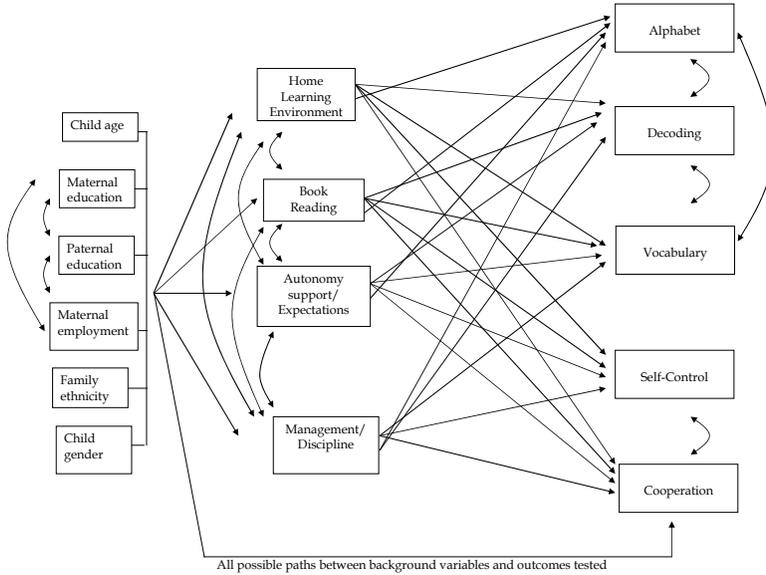
*Note.* SSRS = Social Skills Rating System–Parent Version; WJIII = Woodcock-Johnson III.

whether it might predict vocabulary skills, whereas the HLE factor, with its complement of code-related items, might relate more strongly to alphabet and decoding outcomes. Parents rated the frequency of book reading on the following scale: 1 = almost never, 2 = every so often, 3 = 1 to 3 times a week, 4 = 4 to 6 times a week, and 5 = daily. Most families reported reading either 4–6 times per week or every day with children ( $M = 4.46$ ,  $SD = .82$ ), although the range of responses was fairly wide (i.e., from 2.00, or every so often, to 5.00).

### Questions 2 and 3

Questions 2 and 3 address how dimensions of parenting are related to key social and demographic background variables, as well as to children's early literacy and learning-related social skills. Given that these questions target complementary pieces of the same model, we present them together, focusing first on the analytic strategy and then on the findings.

*Analytic strategy.* To explore the relations among the dimensions of parenting, family background factors, and children's early literacy and social outcomes at the start of school, a path model among observed variables was constructed by using the EQS software. Path modeling enables the examination of relations between multiple observed variables and, as with a structural equation model, provides indices of model fit that account for the entire system of variables (Kline, 2004). Although, as noted earlier, latent variables afford the disattenuation of measurement error from paths of interconnection, the present sample was not large enough to support the simultaneous modeling of latent parenting factors, child outcomes, and



**Figure 1.** Hypothesized path model.

key background variables. Thus, path analysis using observed background variables, observed parenting variables (with weighted mean scores for the three parenting dimensions and book reading), and observed child outcomes was the most appropriate strategy.

Initial models (see Figure 1) investigated associations among preschoolers' alphabet, decoding, vocabulary, self-control, and cooperative/compliant skills and the three empirically derived dimensions of parenting and the frequency of book reading, as well as all possible associations among background factors and both predictors and outcomes. Given the aforementioned evidence that these dimensions of parenting may be interrelated, correlations were estimated among the HLE, WSE, and MD. Further, in light of the substantial literature suggesting that the three literacy skills are distinct but developmentally interconnected, they were allowed to correlate. Similarly, the two social outcomes were allowed to correlate in light of theoretical and empirical suggestion of links between them. Finally, although some work (McClelland & Morrison, 2001) indicates that correlations between literacy and social skills do not emerge until kindergarten, we tested all possible correlations across these two domains.

In addition, the model investigated the contributions of sociodemographic background variables, including ethnicity and maternal and paternal

education, as well as maternal employment, child age, and child gender, to the three dimensions of parenting and to the outcomes. All possible associations were tested, and those that did not meet at least marginal significance ( $p < .10$ ) were trimmed from the final model in the interests of parsimony. Both unstandardized and standardized path coefficients from the final model are listed in Table 4.

*Findings.* The final model (see Table 4) indicated that several background factors were reliably associated with the HLE and with shared book reading. Specifically, families with higher levels of paternal education had higher scores on the HLE factor ( $\beta = .13, p < .05$ ), whereas book reading was more frequent in households with younger children ( $\beta = -.23, p < .001$ ) and higher levels of paternal education ( $\beta = .23, p < .001$ ), as well as in White families ( $\beta = .19, p < .01$ ). Overall, background variables explained 1.8% of the variance in the HLE and 15.7% of the variance in book-reading frequency. None of the background variables predicted the WSE or MD factors.

Investigations of associations between parenting factors and child outcomes (see Figure 2) revealed that the HLE significantly predicted children's alphabet knowledge ( $\beta = .24, p < .001$ ) and decoding ( $\beta = .21, p < .01$ ), as well as their cooperative/compliant skills ( $\beta = .17, p < .05$ ). In contrast, the book-reading item predicted only vocabulary, albeit marginally ( $\beta = .11, p < .10$ ). In addition, the dichotomous WSE variable was not related to any language or literacy skills; however, it predicted children's cooperation/compliance ( $\beta = .23, p < .001$ ) beyond the effects of the other variables in the model. Similarly, MD was unrelated to literacy skills but significantly linked to social skills, including both self-regulation ( $\beta = .19, p < .01$ ) and cooperation/compliance ( $\beta = .18, p < .01$ ).

Significant correlations among the four parenting-related predictors emerged, although they were small to moderate in size, ranging from .16 to .36. In addition, the three literacy outcomes were interrelated, as were the two social outcomes.<sup>1</sup> Overall, the model, including the links between background variables and outcomes, explained 23% of the variance in letter knowledge, 12% of decoding, and 8% of vocabulary. For self-regulation, 9% of the variance was explained, while 16% of the variance in cooperation/compliance was accounted for in the model. The structural model demonstrated an excellent fit to the data, NNFI = .98, CFI = .99, RMSEA = .02,  $\chi^2(df = 41) = 45.11, p = .30$ .

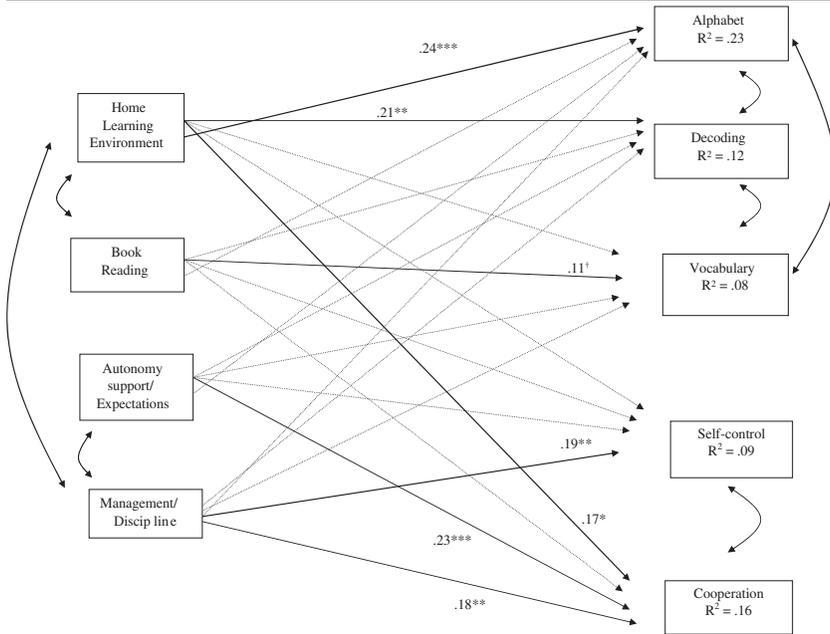
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1. Note that a model in which social skills mediated influences of parenting on literacy was also tested. Results revealed no significant mediating effects.

**Table 4.** Relations between background factors, parenting practices, and child outcomes

Path	Unstandardized path coefficient	SE	Standardized path coefficient	Critical ratio
<i>Dimensions of parenting and child outcomes</i>				
HLE ⇒ alphabet	3.40	.88	.24	3.88
HLE ⇒ decoding	6.95	2.15	.21	3.24
HLE ⇒ self-control	.30	.33	.06	.90
HLE ⇒ cooperation	.77	.32	.17	2.43
Book reading ⇒ vocabulary	1.46	.81	.11	1.81
Book reading ⇒ self-control	-.04	.21	-.01	-.19
Book reading ⇒ cooperation	-.09	.20	-.03	-.46
WSE ⇒ alphabet	-1.49	1.00	-.09	-1.49
WSE ⇒ decoding	-3.61	2.52	-.10	-1.43
WSE ⇒ vocabulary	-.61	1.40	-.03	-.44
WSE ⇒ self-control	.48	.36	.09	1.34
WSE ⇒ cooperation	1.19	.34	.23	3.48
MD ⇒ alphabet	1.08	1.21	.05	.90
MD ⇒ decoding	3.27	3.08	.07	1.06
MD ⇒ vocabulary	-.18	1.79	-.01	-.10
MD ⇒ self-control	1.29	.43	.19	3.00
MD ⇒ cooperation	1.19	.34	.18	3.48
<i>Background variables and child outcomes</i>				
Child age ⇒ alphabet	6.45	.90	.41	7.19
Child age ⇒ decoding	-10.09	2.20	-.27	-4.59
Ethnicity ⇒ vocabulary	6.75	1.94	.22	3.47
Maternal employment ⇒ vocabulary	-3.47	1.39	-.15	-2.49
Paternal education ⇒ self-control	.22	.08	.16	2.73
<i>Background variables and dimensions of parenting</i>				
Paternal education ⇒ HLE	.04	.02	.13	2.19
Paternal education ⇒ book reading	.10	.03	.23	3.72
Ethnicity ⇒ book reading	.47	.14	.19	3.29
Child age ⇒ book reading	-.38	.10	-.23	-4.00
<i>Covariances among parenting dimensions</i>				
HLE ⇐ WSE	.10	.02	.36	5.23
HLE ⇐ book reading	.11	.03	.26	4.03
HLE ⇐ MD	.03	.01	.16	2.38
WSE ⇐ MD	.04	.01	.20	2.98
<i>Covariances among outcomes</i>				
e1 (Alphabet) ⇐ e2 (Decoding)	82.82	9.69	.70	8.65
e1 (Alphabet) ⇐ e1 (Vocabulary)	13.02	4.70	.19	2.78
e2 (Decoding) ⇐ e1 (Vocabulary)	59.87	12.43	.34	4.82
e2 (Self-control) ⇐ e3 (Cooperation)	2.73	.42	.48	6.54
<i>Covariances among background variables</i>				
Paternal education ⇐ ethnicity	.08	.04	.13	1.96
Maternal employment ⇐ ethnicity	.03	.01	.17	2.59

Note. HLE = home learning environment; MD = management/discipline; WSE = autonomy support/expectations.



**Figure 2.** Final path model: associations between parenting and child outcomes. Comparative Fit Index (CFI) = .99; Nonnormed Fit Index (NNFI) = .98; root mean square error of approximation (RMSEA) = .02.  $\chi^2(df = 41) = 45.11$ ;  $p = .30$ . † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Standardized coefficients are shown.

## Discussion

Findings in the current study advance the field by providing a more comprehensive and specific perspective on the nature of parenting and its domain-specific contributions to several aspects of early literacy. First, a three-dimensional model of parenting, incorporating the home learning environment (HLE), autonomy support/expectations (SE), and management/discipline (MD) captured the structure of parenting practices in families with preschoolers. Several background variables were linked to families' self-reported parenting practices, with higher levels of education predicting more frequent home focus on letters and sounds, book reading, and math, and with White families reading books more often than minority families. Most striking were the very domain-specific relations between parenting and child outcomes. In this sample, holding background factors constant, the HLE emerged as a particularly important component of parenting, contributing to code-related literacy skills, as well as to cooperation/

compliance. Echoing and extending the specificity of recent models of home literacy instruction (Sénéchal et al., 1998), book reading was marginally associated with vocabulary learning but not with code-related or social skills. MD was linked to both self-control and cooperation but not to literacy skills, whereas WSE contributed only to cooperation.

Taken together, findings provide novel indications that parenting during the preschool period is composed of multiple, largely independent dimensions capturing both cognitive and affective stimulation, and that these facets of parenting demonstrate relatively specific links to child outcomes. A key implication for families is that *good parenting* is perhaps best thought of as a multifaceted process, with particular efforts suited to particular outcomes. For example, to improve children's decoding skills, parents might be advised to employ activities focused particularly on letters and sounds. On the other hand, to promote children's self-regulation, parents might focus more on guidance and consequences that support appropriate behaviors.

### *Nature of the Home Learning Environment*

HLE emerged as a reliable construct in this study, but its composition differed from some prior work (e.g., Bradley, 2002; Morrison & Cooney, 2002; Rodriguez et al., 2009). The absence of the book-reading item and the seven free-response items may reflect participants' SES. For example, families in this study reported owning between 25 and 1,000 books, whereas some families in the Morrison and Cooney (2002) work reported owning between 0 and 20 books, and 10%–15% of families of infants and toddlers in the Rodriguez et al. (2009) examination of the Early Head Start data had fewer than 5 books. Along the same lines, in contrast to the Morrison and Cooney report, few children in this sample spent more than 2 hours per day watching television or using the computer. More socioeconomically heterogeneous families might provide more variable answers to these items, which would in turn increase the items' power to discriminate between families on the key dimensions of parenting.

### *Relations Between the Home Learning Environment and Child Skills*

Aligned with initial hypotheses and with the developing literature on differential contributions of code- and meaning-related instruction at home (Evans et al., 2000; Sénéchal & Cornell, 1993; Sénéchal et al., 1998), this HLE variable, with several code-focused items, predicted children's alphabet knowledge and decoding skill but did not relate to vocabulary;

conversely, book reading, often considered a tool for advancing vocabulary, marginally predicted vocabulary but not code-related skills. These results underscore the import for cognitive development of the resources, both material and human, to which young children have access at home, as well as the domain specificity of their import.

This converging evidence of the specific links between aspects of parenting and particular literacy skills has important implications for parent training, as professionals (e.g., teachers, home visitors) reaching out to parents might emphasize that effective family involvement is closely linked to the content that it targets. Therefore, letter and sound knowledge is likely best advanced through discussion of letters and sounds (as often occurs in many of the HLE practices included in the current study), whereas vocabulary learning is likely best fostered by discussing new words (as often takes place during book reading).

Findings from this study also demonstrate a unique relation between the HLE and cooperation/compliance. As already noted, much of the parenting literature in the past has considered either the role of parents' cognitive stimulation on children's academic skills or the impact of affective parenting practices on social development. Moreover, examinations of cross-domain associations sometimes omitted important parenting factors or child outcomes that might actually account for these associations. By taking a more comprehensive approach, the current study reveals that parent-child interactions around letters and numbers may present unique opportunities for children to employ joint attention, take conversational turns, and work collaboratively. Although not causal in nature, this finding implies that parents could intentionally foster children's social development through the same practices that might support basic literacy development. However, this effect might operate in the opposite direction; for example, more skilled children might initiate more home learning interactions or be easier to work with. In either event, this finding helps us begin to build specific bridges between traditionally distinct areas of the parenting literature in service of supporting the early academic and social underpinnings of literacy.

### *Nature of Warmth/Autonomy Support/Expectations*

Contrary to hypotheses, items focused on parents' positive affect toward children (e.g., "I enjoy spending time with my child" and "My child and I have warm, intimate moments together") demonstrated little or no variability across the present sample. In fact, fully one third of parents rated themselves as 5's on all of these items (using a scale of 1–5). Moreover, ratings were high even on more variable WSE items. Given that previous

examinations of this questionnaire (e.g., Morrison & Cooney, 2002) have found that parents of kindergarteners varied on all facets of this construct, current findings may indicate that parents of preschoolers regularly have more warm, intimate, and supportive moments with their children than do parents of kindergarteners. Indeed, younger children might demonstrate greater interest in or acceptance of such interaction, or parents might perceive them to do so. Alternatively, the unique results of this study may lie in socioeconomic disparities across studies, as some prior work (see Hill, 2001) has shown that middle- and upper-SES families (such as those in this sample) might report and/or practice parenting that is more consistent with these types of warmth and responsiveness.

Regardless of the underlying issue, this finding raises questions about the utility of self-report methodologies for these items with these particular families, and demands research comparing methodologies and populations. Direct observation of parenting might reveal more nuanced information about families' actual practices. Further, longitudinal analyses following the same sample of participants from preschool through kindergarten could clarify the influences of social background on development over time.

### *Contributions of Autonomy Support/Expectations to Child Outcomes*

Even when conceptualized as a relatively nuanced dichotomous distinction between *high* and *very high* responses on solely WSE, this variable was associated with children's cooperative/compliant skills. It is plausible that parents' awareness of children's independence and appropriate conduct served as a model or a direct support for children's developing sensitivity to others' needs and expectations. In contrast, no significant relations emerged between WSE and self-regulation, which the SSRS measure conceptualizes primarily as behavioral inhibition and emotional self-management. The absence of a significant effect may indicate that self-regulatory development depends not upon parents' attention to and support for children's independence but rather upon actual opportunities for children to practice and receive feedback on their self-control (i.e., opportunities most linked to MD practices) (Diaz, Neal, & Amay-Williams, 1990; Grolnick & Farkas, 2002).

### *Nature of Management/Discipline*

MD emerged as a reliable construct upon which parents reported variable practices that predicted self-regulation and cooperation, reinforcing the

idea—prominent since Baumrind’s studies—that parents’ rule setting and rule enforcing are critically important parts of children’s lives. However, the factor included just four items, largely related to misbehavior, and thus might not capture the full range of MD practices in which parents engage. Future work might explore other self-report items and/or direct observations that would tap into more aspects of this construct among families with young children.

### *Associations Between Management/Discipline and Child Outcomes*

MD was uniquely linked to both self-regulation and to cooperation/compliance. This finding, resonant with some prior work (e.g., Linver et al., 2002), implies that parents’ consistent rule setting and enforcement offers children opportunities to consider guidelines for behavior and consequences for transgressions, which in turn helps them to internalize self-management techniques for their independent actions and in their interactions with others. Although the relation might operate in the other direction—parents provide more consistent MD for children who have stronger social skills—there is little precedent for this pattern in the literature, lending support to the previous hypothesis (for suggestions of the former parent-to-child pattern, see Gagne & Goldsmith, 2011; Rhodes, Greenberg, Lanza, & Blair, 2011; Walker & MacPhee, 2011).

The absence of potential relations between MD or WSE with code- or meaning-focused literacy skills may indicate that a supportive and organized home environment is potentially helpful for preschoolers’ development in this domain but not sufficient; implicit and explicit instruction in relevant material within that organized learning environment may be indispensable (Snow, Burns, & Griffin, 1998). Further, literacy skills and social skills are not linked in this model. Some prior work (McClelland & Morrison, 2001) has found that these relations emerge in kindergarten as children’s knowledge and thinking about literacy become qualitatively more sophisticated and complex. Thus, longitudinal work might examine the potential development of more substantial links between social and cognitive aspects of parenting and children’s literacy learning over time.

Overall, this study provides support for a multidimensional model of parenting among families of preschoolers and maps the specific associations between particular facets of parenting and critical early literacy and social skills, highlighting precise cognitive and affective pathways through which families might support each aspect of early reading-related competence.

*Limitations and Future Directions*

Several limitations frame the interpretation of findings and suggest productive directions for future research. First, as already noted, the study is grounded in parent self-report, which could render the accuracy of responses vulnerable to misunderstanding of questions, misremembering of behaviors because of elapsed time, or even manipulation (intentional or unconscious) of reports to align with perceptions of what is socially desirable. Further, in this study, data on parenting practices were collected only once, using a single measure. Future work might include multiple direct observations of parenting in several contexts; this approach may be particularly helpful in relation to WSE.

On a related note, the link between book reading and vocabulary might have been attenuated by the fact that only one item tapped into reading. Future studies might explore other language-related activities, such as conversations, that might cohere with book reading to create a more robust language-experience-related predictor.

The use of a single measure designed to capture three particular dimensions of parenting enables analysis of whether those dimensions emerge, but it does not provide information about whether other dimensions not tapped in the Parenting Questionnaire might also be relevant, such as parental monitoring of children's activities (Fuglini & Brooks-Gunn, 2004; Stipek & Greene, 2001). Future work with the Parenting Questionnaire might add items reflecting other aspects of parenting and test the degree to which they coalesce with the present dimensions and/or reflect independent aspects of parenting.

Further, at the heart of research on family processes lies the central dilemma of parent-child interaction (Sameroff & MacKenzie, 2003). Untangling how parents and children affect one another might involve following families from a child's birth and carefully and repeatedly measuring parenting practices along with adult and child factors such as self-regulation, temperament, and motivation.

Finally, as noted earlier, ecological systems theories suggest that parenting practices may differ both in nature and in associations with child skills across socioeconomic strata (and, in potentially nuanced ways, ethnicity). The present study targeted a middle-class sample, and this homogeneity may limit the observed role of parent education. Similarly, most families in the current study were of White, native-English-speaking backgrounds. Future investigations of this three-dimensional model of parenting might recruit a more ethnically, culturally, and linguistically diverse

sample in order to better examine the role of these sociodemographic factors in parenting practices and child outcomes. In particular, recruiting more diverse families would illuminate group differences in (a) the variability of responses to each item and (b) the factor structure of the Parenting Questionnaire as whole (see Brooks-Gunn & Markman, 2005). Moreover, a larger sample would allow for more rigorous testing of factor analyses by dividing the sample in half, running analyses with one half and then validating the patterns of relations that emerged with the first half on the second half of the sample (see Kline, 2004).

## Conclusions

This study examined the nature and variation of parents' practices regarding the home learning environment (HLE), warmth/autonomy support/expectations (WSE), and management/discipline (MD), as well as patterns of associations between these dimensions and preschoolers' literacy and learning-related social skills. Results in this middle-income sample suggest that this three-dimensional model captures the structure of parenting in the preschool years, with the caveat that, in this sample, WSE does not include the valence of warmth. Parents' WSE and MD were not related to background factors, including ethnicity and SES, although parents with more education reported more frequent book readings and home learning activities, and parents of minority ethnicity reported less frequent book readings. These parenting practices were important for child outcomes in very specific ways. The HLE, featuring a number of code-related practices, predicted children's letter and decoding knowledge, while meaning-focused book reading marginally predicted vocabulary. In addition, the HLE was related to children's cooperation, as was WSE. Family MD practices predicted both self-regulation and cooperation. Overall, findings reveal that there are multiple, specific pathways through which parents of preschoolers support early learning and that there is considerable merit in integrating both academic and affective facets of parenting and a constellation of basic child skills into a single conceptual model.

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