Parenting Behaviors, Perceptions, and Psychosocial Risk: Impacts on Young Children's Development
Frances Page Glascoe and Shirley Leew
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Parenting Behaviors, Perceptions, and Psychosocial Risk: Impacts on Young Children’s Development

**abstract**

**OBJECTIVE:** The goal of this study was to assess which parenting behaviors, perceptions, and risk factors were associated with optimal versus delayed development.

**METHODS:** A total of 382 families from the national Brigance Infant and Toddler Screens standardization and validation study participated. Data sources included parent questionnaires, child testing, and examiner observations of parent-child interactions. Parenting styles research was operationalized with the Brigance Parent-Child Interactions Scale, a brief measure of parenting behaviors and perceptions.

**RESULTS:** Six positive parenting behaviors and perceptions predicted average to above-average development on the Brigance screens. Conversely, <2 positive parenting behaviors and negative perceptions of children indicated child performance nearly 2 SDs below the mean on Brigance screens. Psychosocial risk factors associated with fewer positive parenting behaviors and with negative perceptions included >3 children in the home, multiple moves, limited English, and parental depression.

**CONCLUSIONS:** A dearth of positive parenting behaviors plus negative perceptions of children, with or without psychosocial risk factors, negatively affect child development, which is apparent as early as 6 months of age. The older the child is, the greater the performance gaps are. Language development is particularly at risk when parenting is problematic. Findings underscore the importance of early development promotion with parents, focusing on their talking, playing, and reading with children, and the need for interventions regarding psychosocial risk factors. *Pediatrics* 2010;125:313–319

**WHAT’S KNOWN ON THIS SUBJECT:** Delayed language skills lead to difficulties in mastering basic reading skills and reading comprehension and to school failure. Parenting skills associated with optimal language development are relatively undefined, especially with respect to approaches with implications for primary care.

**WHAT THIS STUDY ADDS:** This study identifies parenting behaviors and psychosocial risk factors associated with positive versus problematic developmental trajectories, and it suggests critical avenues for primary care interventions regarding parenting behaviors.
Promoting early language development for young children is important to pediatric primary care. Children’s early acquisition of language is strongly predictive of overall development, including later success in school and lifelong health.1,4 Optimally, young children develop crucial language and cognitive skills required for academic literacy well before they enter formal schooling.5 Children who are not ready for school by age 6 are likely to experience academic failure, low self-esteem, behavior problems, depression, social isolation, and health problems.6–8 People who do not experience optimal early development often report poorer health as adults; indeed, adults who were not read to as children and were not well adjusted were 5 times more likely to report poor health than were those who were.5 Effective parenting practices are important factors in the promotion of optimal early childhood development. Stimulation behaviors used by parents, such as frequent talking and playing, are considered critical for the development of language and cognitive skills.9,10 Results from early childhood support programs for disadvantaged children suggest that investments in early childhood affect outcomes that endure for a lifetime.11 Head Start is a program that has a long history of success. Notably, in 1994, because the majority of 4-year-old children entering Head Start were found to be behind national averages, Early Head Start was initiated, with enrichment and stimulation programs for parents to encourage language and literacy development.11

Why is there a focus on parents’ interaction skills? Hart and Risely,9 in a landmark study, found 5 parenting behaviors that predicted future achievement in children, namely, (1) using rich vocabulary when speaking with children, (2) using words to respond to children’s behavior, (3) using verbal guidance to encourage development, (4) putting emphasis on language for communicating, and (5) being responsive to a toddler’s emerging attempts to communicate. Subsequent research highlighted the importance to language development of communication balance between adults and toddlers and adult responses focusing on the child’s interests, initiations, and communication.11,12 The transactional model of development emphasizes the dependence of optimal child development on sensitive, skillful caregiver responses.13 Parents’ verbal behaviors contribute to children’s cognitive performance up to 3 years of age, even when family resources and individual differences are controlled.14 Optimal language development occurs within interactions that are stimulating and supportive, in which young children experience predictable, developmentally appropriate responses from adults.5 Environmental risk factors such as family size, maternal mental health, and socioeconomic influences have direct effects on parents’ interaction styles, which in turn affect children’s cognitive (eg, language) development.5,15,16 Individual differences in child development are therefore sensitive to a complex interplay of socioeconomic, psychosocial, and child-inherent risk factors.

Why is this important to primary care? Pediatricians have long promoted early book-sharing and reading aloud, as exemplified by the Reach Out and Read program. Reach Out and Read is effective in improving language outcomes among older toddlers and preschool-aged children, particularly those in disadvantaged environments.17–21 Perhaps book reading by parents easily provides necessary language stimulation such as rich vocabulary, a focus of interest shared with the child, and age-appropriate communication. Such brief effective interventions for parents within pediatric primary care merit attention for a number of important reasons. First, pediatric primary care providers have frequent contact with almost all children in the first years of life. Moreover, most parents seek primary care for their children,22,23 including parents with risk factors for suboptimal child development, such as socioeconomic disadvantage or maternal depression.24–26 Furthermore, most parents take seriously the recommendations of primary care providers27 and often change their behaviors in response to recommendations.19 The 2006 Bright Futures/medical home policy statement from the American Academy of Pediatrics28 emphasizes “surveillance,” that is, identifying and promoting resilience factors and intervening promptly regarding risks, including the problematic parenting behaviors associated with adverse developmental outcomes. The policy statement clearly emphasizes the causal impact of parenting practices during the early years and the effectiveness of brief interventions in primary care.29,30

In this study, we sought to identify parenting behaviors, perceptions, and psychosocial risk factors that are associated with child language development outcomes. We hypothesized that positive parenting requires a range of skills that includes reading aloud but also importantly includes a focus on caregivers’ frequent use of language to comment on children’s interests at their developmental level, to point out and to label new things, and to respond to emerging skills. Primary care providers could help focus developmental promotion activities by increasing parents’ knowledge about effective behaviors to use in their interactions with their toddlers. Information about the risks associated with parents’ lack of positive perceptions
and behaviors also could help physicians make decisions about referrals to parent-training interventions.

**METHODS**

**Subjects and Sites**

The families enrolled in this study participated in the national standardization and validation study of the Brigance Infant and Toddler Screens. Participants were 382 families that reflected US population parameters in September 2008. Two hundred three children were 2 weeks through 11 months of age, and 179 were 12 through 24 months of age. Forty-eight percent of children were female. Parents had completed, on average, 13.2 grades of school; 22.5% had not completed high school and 31% had college or postgraduate training. Seventy percent were white, 14% black, 12% Hispanic, and 4% other minorities. Children with known disabilities (as well as children thought to perform below average, although they rarely were identified by 0–2 years) were not excluded because they ensured a nationally representative sample. They were included at levels proportional to their prevalence in the overall population (~9%).

Families were recruited from 22 sites in 17 US states, including pediatric practices, public health departments, day care centers, and early intervention programs. All study protocols were translated into Spanish, for use with families requiring Spanish-language materials. The study protocol was reviewed and approved by the institutional review board of Vanderbilt University, and informed consent was obtained from parents accompanying each child.

**Measurements**

**Child Development Testing**

The Brigance Infant and Toddler Screens were administered to each child. The Brigance screens have 90 to 110 items for each year of age. Six subtests (fine motor, gross motor, self-help, social-emotional, receptive language, and expressive language) are grouped into 2 factors, that is, nonverbal (fine motor, gross motor, self-help, and social-emotional) and communication (receptive language and expressive language). Cutoff scores (generally ≤16th percentile), age-equivalent scores, quotients, and percentiles are provided. The Brigance Infant and Toddler Screens were validated against diagnostic measures of development, including the Bayley Scales of Infant Development, the Alberta Infant Motor Scale, the Rosetti Infant Toddler Language Scale, and the Vineland Adaptive Behavior Scale. Diagnostic measures and subtests with similar content correlate well with Brigance screen subsets (correlation coefficients of 0.70–0.91 and reliability indices of 0.98–0.99). The Brigance screen was 76% to 77% sensitive to a range of developmental problems and 85% to 86% specific in correctly detecting normal development. Chronologic ages of children born ≥4 weeks early were corrected for prematurity.

**Parent-Completed, Previously Validated, Questionnaires**

Parents completed a demographic questionnaire eliciting information about psychosocial risk factors, including screenings for depression (Family Psychosocial Screen) and anxiety.

**Experimental Measures of Parenting**

Parents responded to the Brigance Parent-Child Interactions Scale (BPCIS), an experimental 18-item measure of parenting behaviors and perceptions about their children. BPCIS items were drawn from extensive relevant literature.

**Professional Examiner Observations**

An observation version of the BPCIS was used by examiners, who also were asked to report on the frequency and length of contact with families (eg, number of previous office visits, months of enrollment, and/or hours of service contact).

**Procedures**

Examiners at each site were pediatric nurse practitioners, early childhood educators, pediatricians, or psychologists. All were recruited through vari-

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**TABLE 1** BPCIS Statements Associated With Parent Interaction Styles and Language Development

<table>
<thead>
<tr>
<th>BPCIS Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>I help my child learn by talking and showing him or her new things.</td>
<td><strong>Responsivity</strong> Hart and Risely9 Yoder et al12 Dunst et al13</td>
</tr>
<tr>
<td>I talk to my child in a special way.</td>
<td><strong>Efficacy</strong> Hart and Risely9 Yoder et al12 Dunst et al13</td>
</tr>
<tr>
<td>My child is fun to be with.</td>
<td><strong>Guidance style</strong> Hart and Risely9 Yoder et al12 Dunst et al13</td>
</tr>
<tr>
<td>My child is not very much fun to be with.</td>
<td><strong>Reciprocity</strong> Hart and Risely9 Yoder et al12 Dunst et al13</td>
</tr>
<tr>
<td>I can make my child feel better when he or she is upset.</td>
<td><strong>Endearments/guidance style</strong> Hart and Risely9 MacDonald14 Dunst et al13</td>
</tr>
<tr>
<td>My child does not seem to calm down or seem very interested when I talk to him or her.</td>
<td><strong>Emotional attachment</strong> Hart and Risely9 MacDonald14 Dunst et al13</td>
</tr>
</tbody>
</table>
analyses of the 8 months (range: 1–20 months). Among families involved through child-find and assessment services (with many also receiving home-based services), contact length was recorded for 91.9%, with a median of 19.0 hours (range: 1–998 hours). The amount of contact explains the relatively high concordance between examiners and parents. Seventy-one percent of parents and examiners had identical ratings about frequency of parental book-sharing.

**RESULTS**

**Prevalence of Developmental Delay**

Of the 382 participating children, 16.8% performed below the age-appropriate cutoff score on the communication factor of the Brigance screens. This value is consistent with recent studies on the prevalence of significant developmental delay in young children.

**Prediction of Developmental Status From Parenting Behaviors and Perceptions**

Cutoff scores for the communications factor of the Brigance screens served as the dependent variable in a logistic regression analysis. Predictors were parenting behaviors (with the exclusion of reading aloud, which was analyzed separately) and perceptions, drawn from the BPCIS. The following 4 positive parenting behaviors predicted optimal developmental outcomes significantly: “I help my child learn by talking and showing him or her new things” (odds ratio [OR]: 2.0 [95% confidence interval [CI]: 1.38–2.78]), “I talk to my child in a special way” (OR: 4.2 [95% CI: 3.48–4.88]), “I can make my child feel better when he or she is upset” (OR: 1.7 [95% CI: 1.50–1.82]), and “I talk with my child when feeding or eating with him or her” (OR: 1.9 [95% CI: 1.39–2.72]). The absence of the following 2 negative perceptions

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**TABLE 2 BPCIS Items (Parent Report Version)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I play with my child and show him or her things about toys.</td>
<td>Not very often</td>
</tr>
<tr>
<td>2. I hug and kiss my child.</td>
<td>Not very often</td>
</tr>
<tr>
<td>3. I mostly talk to my child when he is crying.</td>
<td>Not very true</td>
</tr>
<tr>
<td>4. I help my child learn by talking and showing him or her new things.</td>
<td>Not very true</td>
</tr>
<tr>
<td>5. I look at or read children’s books to my child.</td>
<td>Not very often</td>
</tr>
<tr>
<td>6. My child does not calm down or seem very interested when I talk to him.</td>
<td>Mostly true</td>
</tr>
<tr>
<td>7. I make up games or songs for my child.</td>
<td>Not very often</td>
</tr>
<tr>
<td>8. When my child looks at or touches a toy, I talk to him about the toy.</td>
<td>Not very often</td>
</tr>
<tr>
<td>9. When my child is looking at me, I talk or make sounds with him.</td>
<td>Not very often</td>
</tr>
<tr>
<td>10. My child doesn’t seem to like me.</td>
<td>Mostly true</td>
</tr>
<tr>
<td>11. I enjoy feeding my child or eating with him.</td>
<td>Not very often</td>
</tr>
<tr>
<td>12. I talk to my child in a special way.</td>
<td>Not very often</td>
</tr>
<tr>
<td>13. My child is not very much fun to be with.</td>
<td>Mostly true</td>
</tr>
<tr>
<td>14. I can make my child feel better when he or she is upset.</td>
<td>Not very often</td>
</tr>
<tr>
<td>15. When my child looks at or touches something, the first thing I say is “no.”</td>
<td>Mostly true</td>
</tr>
<tr>
<td>16. Most of the time I like my child.</td>
<td>Not very often</td>
</tr>
<tr>
<td>17. My child does not need my help learning new things.</td>
<td>Mostly true</td>
</tr>
<tr>
<td>18. I talk with my child when feeding or eating with him or her.</td>
<td>Not very often</td>
</tr>
</tbody>
</table>

The publisher of the scale gives permission for these items to be adapted or reproduced.

* Combined with examiner report to create an indicator of book-sharing.

ous professional societies. Participating professionals recruited families of young children who were enrolled in their programs or practices. Examiners administered the Brigance Infant and Toddler Screens directly to children and completed the BPCIS observation version. Parents completed the parent-report version of the BPCIS and reported measures of psychosocial risk.

**Analyses**

Data were analyzed by using SPSS (SPSS Inc, Chicago, IL). Variables were tested for outliers, heteroscedasticity, and multicolinearity. Stepwise logistic regression analyses were performed with forward inclusion, to identify plausible predictors and to build a model in the absence of fully established theory.

Questions to parents about reading aloud to their children might be affected by social desirability, and this phenomenon was minimized as follows. If parents and examiners agreed on reports of frequent reading, then the family was designated as book readers (46%); if either parents or examiners indicated that parents were reading “not very often” or “sometimes” with their children, then the family was designated as limited book readers (54%).

Justification for combining parent and examiner observations was based on the frequency of contact between examiners and parents. Among families participating within medical settings, the number of previous office visits was recorded for 79.7%, for a median of 5 visits (range: 1–19 visits). Among families participating through day care and early intervention programs, the duration of attendance was recorded for 64.1%, with a median attendance of 8 months (range: 1–20 months). Among families involved through child-find and assessment services (with many also receiving home-based services), contact length was recorded for 91.9%, with a median of 19.0 hours (range: 1–998 hours). The amount of contact explains the relatively high concordance between examiners and parents. Seventy-one percent of parents and examiners had identical ratings about frequency of parental book-sharing.
also contributed: “My child is not very much fun to be with” (OR: 4.5 [95% CI: 3.45–5.61]) and “My child does not seem to calm down or seem very interested when I talk to him or her” (OR: 1.8 [95% CI: 1.28–2.36]).

As shown in Fig 1, parents who endorsed ≥2 of the positive behaviors or held ≥1 negative perception had children with 3 times the risk of delay, compared with children whose parents reported ≥2 positive behaviors and no negative perceptions of their children (OR: 3.0 [95% CI: 2.24–3.94]). The impact of parenting behaviors and perceptions on children’s developmental status increased with children’s ages. No meaningful differences in communication scores were seen among children 0 to 5 months of age, but significant differences were found in all older age groups. The older the children were, the greater the differences in developmental outcomes.

**Prediction of Developmental Status From Frequency of Book-Sharing**

To examine relationships between book-sharing and language skills for infants and toddlers, children were grouped according to cutoff scores on the communication factor of the Brigance screens. Of the families who seemed to be nonreaders or limited book readers, 21% had children at risk for developmental problems, compared with 12% of the families who were book readers. When data were analyzed through logistic regression, families for whom book reading was uncommon were almost twice as likely to have a child with delays (OR: 1.9 [95% CI: 1.36–2.60]). By 6 months of age, children whose parents read aloud frequently outperformed children whose parents read rarely; this pattern continued through 24 months of age. Differences in communication skills increased with age, as shown in Fig 2, and the magnitude of the discrepancy between groups increased steadily with the age of the child.

**Prediction of Developmental Status From Parenting Behaviors, Perceptions, and Psychosocial Risk Factors**

Logistic regression analysis was conducted with cutoff values on the communication factor of the Brigance screens as the dependent variable and with psychosocial risk factors and all 18 parenting behaviors and perceptions as predictors. Six variables were predictive of results below cutoff scores on the Brigance screens, that is, >3 siblings in the home (OR: 2.73 [95% CI: 1.87–3.99]), ≥2 household moves in the past year (OR: 1.9 [95% CI: 1.37–2.72]), elevated scores on the depression screen (OR: 3.5 [95% CI: 2.25–5.42]), limited English facility (OR: 25.0 [95% CI: 11.32–55.42]), and negative (ie, not very often/rarely) endorsements on the parenting behavior items of “I talk to my child in a special way” (OR: 2.8 [95% CI: 1.61–4.96]) and “I help my child learn by showing him or her new things” (OR: 1.9 [95% CI: 1.27–2.96]). Nonsignificant psychosocial variables were employment, ethnicity, parent education, anxiety, and all remaining BPCIS behaviors and perceptions.
DISCUSSION

Although book-sharing remained an expected contributor (ie, there is an abundance of literature demonstrating its positive influence on oral language development and school success), this study revealed other parenting behaviors and perceptions that contributed to language developmental status. Specifically, parents who reported activities such as, “I help my child learn by talking and showing him or her new things,” “I talk to my child in a special way,” “I can make my child feel better when he or she is upset,” and “I talk with my child when feeding or eating with him or her” and/or perceived their children as “fun to be with” and “interested when talked to” had children who, by 6 months of age, were more likely to have language skills in the average range, compared with parents with fewer positive behaviors and perceptions. Notably, the important language achievement gaps widened with increasing age.

The psychosocial risk factors that seemed to affect positive parenting practices and positive perceptions included ≥3 children in the family, ≥2 household moves in the past year, elevated scores on depression screening, and limited English facility. It is hardly surprising that parents with multiple burdens and fewer resources are less likely to enjoy interacting with their children, to remain interested in talking to them, or to engage in positive parenting practices. Therefore, interventions for psychosocial risk factors are also crucial for optimal child development.

Future research in parenting behaviors that affect child development is crucial. Because this study was cross-sectional, it was not possible to establish a cumulative impact on child development of parenting behaviors, perceptions, and psychosocial risk, although previous research indicated a causal relationship between parents’ beliefs and actions and child outcomes. Therefore, we recommend cross-validation through a longitudinal study. Another critical focus for future studies is to operationalize parenting behaviors/perceptions into developmental promotion interventions that are brief and workable in busy primary care settings, following the example of effectiveness research established by the Reach Out and Read program.

In the interim, clinicians should advise parents routinely on the value of talking frequently with their children, modeling and expanding children’s utterances, actively teaching new words, sitting down to meals and talking together, and describing to children what they are seeing and doing. A second clinical implication of this study is the need to monitor the effectiveness of such advice. Especially challenged families may not respond well to brief advice and may require more-intensive assistance. Such families are likely to have psychosocial risk factors, and a third implication of this study reinforces the value of American Academy of Pediatrics policy on identifying and intervening with issues such as stress, depression, housing needs, and English language training. Complex family problems often are beyond the scope of primary care services and are less than amenable to the brief counseling that is effective with less-challenged families. Psychosocial interventions usually require social work support and/or early interventions for delayed or troubled toddlers. Therefore, a fourth clinical implication is the recommendation to develop treatment collaborations among primary care, social services, and/or community early intervention providers. In delivering and monitoring the effectiveness of brief advice on parenting skills and psychosocial risk factors, clinicians clearly can have a greater positive influence on the developmental and life trajectories of children and families in their care.

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