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Evaluation of a Clinic-Based Program to Promote Book Sharing and Bedtime Routines Among Low-Income Urban Families With Young Children

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Abstract

Objective To evaluate a program of anticipatory guidance in which pediatric residents and nurse practitioners in a continuity practice gave parents books for their young children along with developmentally appropriate educational materials

describing why and how to share the books and promoting reading as part of a bedtime routine.

Study Design Comparison of 2 cross-sectional groups using consecutive, structured, face-to-face or telephone interviews of parents. One group was a historical control or a comparison group (group 1). The other was the intervention group (group 2), which included families who had received 2 books and educational materials for the children as part of the program to promote book sharing and bedtime routines.

Subjects Before the institution of the program to promote book sharing and bedtime routines, the parents in 51 families with healthy children 12 to 38 months of age who regularly attended continuity clinics conducted by the house staff were interviewed; these families constituted group 1. Group 1 included a low-income population of Hispanic, African American, and non-Hispanic white families. Group 2 included 100 families with similar sociodemographic characteristics with healthy 12- to 38-month-old children who had received 2 books and educational materials at all 6- to 36-month well-child visits as part of the program.

Results The intervention was found to be effective in promoting child-centered literacy activities. When asked open-ended questions, 4 (8%) of the parents in group 1 and 21 (21%) of the parents in group 2 said 1 of their child's 3 favorite activities included books (*P*=.04); 11 (22%) of the parents in group 1 and 42 (42%) of the parents in group 2 said 1 of their 3 favorite activities with their child was book sharing (*P*=.01); and 10 (20%) of the parents in group 1 and 35 (35%) of the parents in group 2 said that they share books 6 or 7 times a week at bedtime (*P* =.05). By mentioning 1 of these 3 important child-centered book-sharing activities, 17 (33%) of the parents in group 1 and 69 (69%) of the parents in group 2 (*P* <.001) demonstrated positive child-centered literacy orientation . A multiple logistic regression analysis controlling for parental education, ethnicity, and reading habits, as well as for the sex and age of the children, found child-centered literacy orientation more likely to be present in group 2 than in group 1 families, with an odds ratio (OR) of 4.7 (95% confidence interval [CI], 2.1-10.5; *P*<.001). Book sharing as part of a bedtime routine was more frequent in group 2 (mean±SD, 3.9±2.6 nights per week) than in group 1 (mean±SD, 2.5±2.7 nights per week; *P*=.002); however, no significant differences in prolonged bedtime struggles,

parent-child cosleeping, frequent night waking, or how children fell asleep were found between the groups. Instead, in multivariate analysis, bedtime struggles occurred more often with younger parents (*P*=.03) and fewer children at home (*P*=.02), while parent-child cosleeping (*P*<.001) and frequent night waking (*P*=.04) were less likely to occur when children usually fell asleep alone in their own beds.

Conclusions This simple and inexpensive intervention by pediatric house staff, consisting of the provision of children's books and educational materials at well-child visits, resulted in increased enjoyment of and participation in child-centered book-related activities in low-income families. Primary care providers (ie, physicians and nurse practitioners) serving underserved pediatric populations may have a unique opportunity to promote child-centered literacy in at-risk groups.

THE LITERACY level of American children and adults is a national concern. The US Department of Education has reported that 90 million Americans lack adequate literacy[1] and that two thirds of US children read below their grade level.[2] We know that reading failure disproportionately affects children from socially and economically disadvantaged families[2-4] and contributes to continuing the cycle of poverty. Reading failure in school can be a major disability that leads to frustration and lack of self-esteem and may contribute to increasing rates of school dropout, teen pregnancy, delinquency, and, perhaps, even substance abuse. A consensus statement from the National Institute of Education suggests that reading aloud to children is the single most important parental activity to prepare children to succeed in learning to read.[5] Early onset of home reading routines has been associated with higher reading scores and verbal performance in the primary grades[6-8] and increased expressive and receptive language skill in toddlers.[9,10] Teaching parents specific techniques to use while sharing books with their toddlers can increase their child's language development.[11-15]

In 1991, Needlman et al[16] evaluated a pilot program in which pediatricians distributed children's books at clinic visits to low-income children and their parents. They evaluated parents' "literacy orientation" by determining whether parents had looked at books with their child during the previous 24 hours or whether books were among their child's 3 favorite activities. Of parents who reported receiving a book, 53% had a positive literacy orientation compared with

32% of parents who reported not receiving a book (*P*=.06). When a logistic regression was performed controlling for age of the children and parental education, ethnicity, reading habits, and receipt of support from Aid to Families With Dependent Children, receiving a book was significantly associated with literacy orientation (odds ratio [OR]=4.05, 95% confidence interval [CI]=1.12-14.6; *P* =.03). This was the first study suggesting that pediatric primary care providers, who are often the only consistent professionals with continuous involvement in the care of infants and preschoolers, may have a unique opportunity to promote literacy in low-income families with young children. We undertook this study to confirm and extend the findings of Needlman et al[16] in our multiethnic and low-income population.

In addition to providing the families attending our clinic with books, we wanted to standardize the information that our diverse group of primary care providers (ie, pediatric residents and pediatric nurse practitioners) offered parents. For this reason, we developed age-appropriate educational materials that were given to families along with each book. We wanted to offer specific information to parents about why, how, and when to share books with their children, so we recommended that bedtime would be a wonderful time for book sharing. We believed that regular bedtime routines could have additional benefits and might reduce potential sleep problems in the children. Structured bedtime rituals with firm limits that end with children falling asleep in their own beds have been recommended for the prevention and treatment of bedtime struggles and frequent night waking.[17-21] Educational materials provided with books gave parents developmentally appropriate ways to share books with their children, strongly recommended a regular bedtime as a good time for this activity, and said that children who learn to fall asleep alone in their own beds have less night waking and fewer bedtime struggles.

This study evaluated a program of anticipatory guidance that promoted child-centered literacy by distributing children's books and educational materials to low-income families at all routine well-child visits for children aged 6 to 36 months. We hypothesized that the provision of children's books and educational materials by primary care providers at well-child visits would increase parental reports of enjoying books with their young children, and, specifically, that the

amount of book sharing at bedtime would increase. In addition, we wanted to use this as an opportunity to better understand the contribution to emergent literacy activities made by the family's cultural background, language, education, and reading habits and the child's age. A second hypothesis was that regular bedtime routines with book sharing would lead to more children falling asleep independently and would decrease the occurrence of frequent night waking, prolonged bedtime struggles, and, possibly, parent-child cosleeping.

Subjects and methods

Subjects

Subjects

Subjects were recruited from the hospital-based primary care pediatric practice of Hasbro Children's Hospital, Providence, RI. The practice serves as a provider of primary care for mostly low-income families from the surrounding multiethnic urban communities.

This study was designed as a comparison of 2 cross-sectional groups of families. Because the intervention was funded as a service for all families attending the clinic and because of the complexity of the clinic with more than 60 primary care providers, a randomized controlled design was impossible. We considered the use of a carefully selected historical control group an appropriate alternative design. A longitudinal study design was rejected because, without a control group, any findings of increased literacy orientation could be interpreted as appropriate developmental change rather than as a true effect of the intervention. The historical control or comparison group (group 1) consisted of 51 families from which parents were interviewed about family activities and routines during June and July 1994 in anticipation of the establishment during the fall of 1994 of a program to promote book sharing and bedtime routines. The intervention group (group 2) consisted of 100 families in which parents were interviewed between May and September 1995. Families in group 2 were known to have received at least 2 books at well-child visits as part of the program, and their last visit was at least 1 month before the interview. The intervention was clinic-wide; however, only parents of healthy children regularly attending continuity clinics and meeting specific eligibility requirements were enrolled in this study and interviewed.

Children

At the time of the interview, eligible children were 12 to 38 months old and had attended their previous 2 well-child visits in our clinic. Additional eligibility criteria were birth weight of at least 2.27 kg, hospitalization for fewer than 14 days since birth, and the absence of major congenital anomalies, sensory deficits, or developmental delays. To provide a representative sample in group 1, children were stratified at entry into 1 of the 4 following approximately equal-sized groups: 1-year-old boys, 1-year-old girls, 24- to 38-month-old boys, and 24- to 38-month-old girls. After review of the medical records, the first 51 children eligible for group 1 were enrolled in the study, and their parents were interviewed by consecutive clinic encounter at their clinic visit. For children in group 2, 1 month after their parents had received 2 books with accompanying educational materials at 2 well-child visits, medical records were reviewed for eligibility criteria. If appointments were scheduled for eligible children within the study period, parents were interviewed face-to-face while waiting for the scheduled appointment. If parents missed multiple appointments or did not schedule appointments, they were contacted by telephone for the interview. One hundred families were enrolled in group 2. Because of less frequent well-child visits after 18 months of age, fewer children aged 24 to 38 months became eligible for group 2; thus, they represent only 25% of group 2.

Parents

Parents were eligible to be interviewed if they were the primary caregivers living with their child and had brought their child to the last 2 well-child visits in our clinic. In addition, eligible parents spoke English well enough to participate in the interview. Parents included in group 1 were not eligible for group 2. Parents were invited to participate in this study by consenting to be interviewed about their child's interests, activities, and sleep behaviors. Our interest in literacy was not disclosed to them. Parents were given a $5 cash incentive for their participation in the interview. The same research assistant screened and interviewed all parents in both groups.

For potential members of group 1, 27% of families screened did not meet eligibility criteria: 30% for parental exclusions, usually language, and 70% for child exclusions, usually hospitalizations totaling more than 14 days. For group 2, 32%

of families who received 2 books and educational materials did not meet eligibility criteria based on review of the medical record. Only 1 parent declined the interview. As a check on intervention status, parents were asked how many new books for their child, if any, had been received from the pediatrician or nurse practitioner. The mean±SD new books reported as received was 0.04±0.20 by parents in group 1 and 2.29±1.09 by parents in group 2 (P<.001).

The intervention

Between October 15, 1994, and September 15, 1995, 68 pediatric residents and 3 nurse practitioners distributed more than 1200 children's books to patients at all scheduled 6-, 9-, 12-, 15-, 18-, 24-, 30-, and 36-month well-child visits. All books selected were sturdy children's board books that could be tasted, handled, read, reread, and loved by young children. They contained colorful pictures of children from culturally diverse backgrounds or friendly animal figures and relatively few words; the intent of the words was clear. Our aim was to select books that parents would enjoy sharing with their child and books that included abundant pictures that could be used by parents who were comfortable reading and parents who were not. We hoped that parents with limited knowledge of English might find these books a useful introduction to the language. Many of the books selected also had mirrors made of a polyester film (Mylar), finger puppets, peek-a-boo holes, or flaps, beneath which hidden pictures suggested multiple opportunities for facilitating positive parent-child interactions involving books.

In addition to giving new books, the primary care providers gave parents educational materials specific to the age of the child at each well-child visit that detailed why, how, and when to share books with their children. The educational materials advised parents that even young children can enjoy and learn from book sharing and that looking at books as part of a regular bedtime routine can help children learn to fall asleep alone in their own beds, thereby reducing bedtime struggles and frequent night waking. The educational materials described how children at various ages can be expected to use a book and how parents can encourage and enjoy this time; the materials suggested imitating, playing with, and enjoying their child's reactions and encouraging their child to respond verbally or nonverbally. Educational materials were written in a bulleted format and at a fifth-grade reading level. Residents and nurse practitioners were asked to mention 1 or

2 points on the educational materials when they gave the materials and books to the parents. Residents attended training sessions on literacy promotion in young children, the use of children's books as developmental assessment tools, the prevention of sleep disturbances in infants and toddlers, and language promotion in infancy. Residents received a mean of 2.2 hours of a possible 4 hours of training.

Procedures and measures

Parent Interview

The interview required 8 to 12 minutes and consisted of 88 questions based in part on the interview developed by Robert Needlman, MD (written communication, 1993) and the Sleep Habits Questionnaire.[22] The interview began with demographic questions followed by 2 open-ended questions: "What are your child's 3 favorite things to do other than eating and sleeping?" and "What are your 3 favorite things to do with your child?" If vague answers were given, such as "play," parents were asked to give examples or to name any special toys. The interview asked how many trucks, cars, dolls, blocks, and books their child had at home and about parental reading habits and the total number of books in the home. Questions about behavioral concerns, bedtime routines, bedtime struggles, night waking, and parent-child cosleeping were included, as well as questions about practices of the physicians and patient satisfaction.

All interviews for group 1 and 61% of interviews for group 2 were conducted in the clinic waiting or examination rooms. For group 2, 39% of the interviews were conducted by telephone because follow-up pediatric visits were not scheduled or kept within the study period. Literacy orientation was found to be equal for the parents interviewed by telephone and parents interviewed in the clinic, so this factor was not considered further in our analysis.

Outcome Variables

The primary outcome variable included 3 component variables and was recorded as a composite dichotomous score. The composite variable, child-centered literacy orientation (CCLO), was considered present if the response to 1 or more of 3 component questions was positive: (1) "What are your child's 3 favorite things to do other than eat and sleep?" (2) What are your 3 favorite things to do with your child?" and (3) "How many nights each week do you share books with your child to

prepare your child for sleep?" The responses to questions 1 and 2 were considered positive if books were mentioned, and the response to question 3 was positive if parents reported sharing books at bedtime at least 6 nights per week. A minimum of 6 nights was chosen as indicative of a firmly established family routine. In devising the dichotomous CCLO variable, we wanted to distinguish families with a particularly strong focus on literacy related to their child.

Sleep variables were defined consistent with definitions in the literature.[17,18,20,21] Frequent night waking was defined as waking and calling for parental attention 3 or more nights per week. Prolonged bedtime struggles were considered present if parents reported that their child fought going to bed for at least 30 minutes each night. Parent-child cosleeping was considered present if the response to the question "Where does your child sleep for most of the night?" was "With a parent or another adult." To remain consistent with other dichotomous variables, "usually" falling asleep alone in the child's own bed and "usually" falling asleep in front of television were present when they occurred at least 6 nights per week.

Data Analysis

For univariate analysis, the ^{2} statistic was used for categorical variables, and the Student *t* test was used for dimensional data. Multivariate analysis involved multiple logistic regression of the major outcome variable, CCLO, and of sleep variables to control for variation in demographic factors between groups 1 and 2. Multiple linear regression was used to adjust for demographic factors in the analysis of the frequency of bedtime book sharing in the groups. Data are reported as mean±SD unless otherwise indicated.

Results

Demographic characteristics

Table 1 shows that demographic characteristics were similar in the 2 groups with 2 exceptions: children were significantly younger and parental education was significantly higher in group 2. Parents were primarily single unemployed mothers with a mean age of 25 years, and almost half spoke multiple languages or only Spanish at home. More than 90% received Medicaid, reflecting their low-income status. African American, Hispanic, and non-Hispanic white families were

represented in both groups; the relative proportions in the groups were similar.

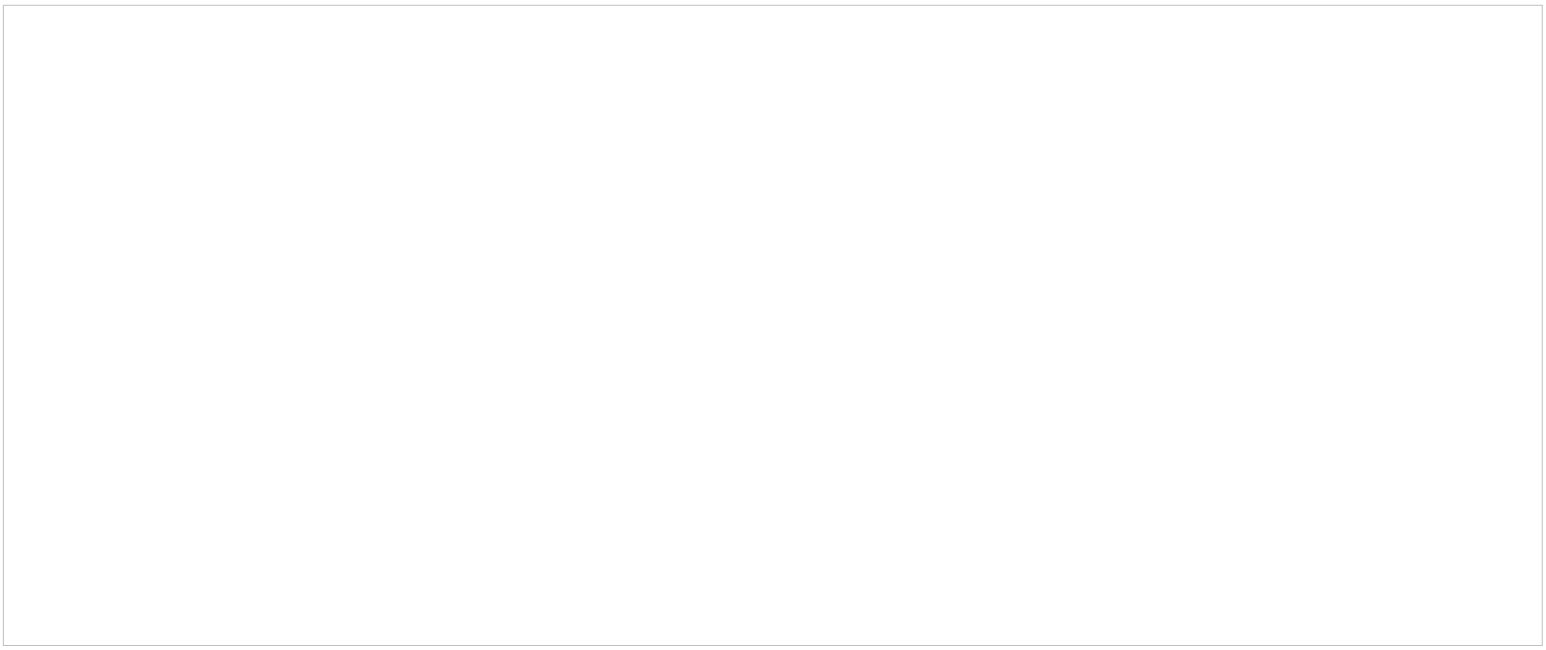
Table 1.

Demographic Characteristics of Study Subjects*

Child-centered literacy orientation

As shown in Figure 1, significantly more positive literacy-related responses were found in group 2 than group 1 for all 3 CCLO component questions and for the composite CCLO variable (Figure 2). Four parents (8%) in group 1 and 21 (21%) of group 2 parents reported that 1 of their child's 3 favorite things to do was share books; 11 (22%) of group 1 and 42 (42%) of group 2 parents reported that 1 of their 3 favorite things to do with their child was share books; and 10 (20%) of group 1 and 35 (35%) of group 2 parents reported sharing books at bedtime 6 or 7 nights per week. The composite variable, CCLO, was present in significantly more group 2 families (69 [69]) than group 1 families (17 [33]). A multiple logistic regression analysis controlling for parental education, ethnicity, and frequency of reading books, as well as the sex and age of the children, found that CCLO was more likely to be present in group 2 than group 1 families with an OR of 4.7 (95% CI, 2.1-10.5; $P<.001$; $R^2=0.17$). In this model, the only additional factor found to be independently associated with the presence of CCLO was parents who read books themselves at least a few times a week (OR, 2.7; 95% CI, 1.3-5.9; $P=.009$).

Figure 1.



Results for the child-centered literacy orientation component questions. Group 1 was the comparison group; group 2, the intervention group. The response to question 1 indicated that 1 of the child's 3 favorite activities was sharing books; question 2, that 1 of the parent's 3 favorite shared activities with the child was looking at books together; and question 3, that books were shared at bedtime 6 or 7 nights per week. Data are given as number (percentage). The *P* value for question 1 is *P*=.04; for question 2, *P*=.01; and for question 3, *P*=.05.

Figure 2.

Results for the child-centered literacy orientation composite variable. Data are given

as number (percentage) of positive responses (P<.001). Group 1 was the comparison group; group 2, the intervention group.

Cclo in child and parent subgroups

To better understand factors that might mediate the effect of the intervention, we stratified the sample by some of the characteristics of the index child and the interviewed parent. We also controlled for parental education and age of the children, the 2 factors found to be significantly different in groups 1 and 2, as appropriate, with a multiple logistic regression. As shown in Table 2, the presence of CCLO was associated with the intervention in the subgroups of older and younger children and in parental subgroups with and without a high school education. We also found CCLO to be significantly associated with the intervention when parents were single or separated, but not when they were married or living with a partner. Significant effects of the intervention were found in the Hispanic and non-Hispanic white subgroups, but not in the smallest ethnic subgroup, African Americans. The trend, in both subgroups in which no significant effects of the intervention were found, was toward greater CCLO in group 2 families; however, these were the smallest subgroups, limiting the power of our analysis. We also found CCLO to be associated with the intervention in subgroups composed of families receiving any 1 of the 4 indicators of low-income status: Medicaid, Aid to Families With Dependent Children, food stamps, or support from the Women, Infants, and Children program.

Table 2.

Odds Ratios From Multiple Logistic Regressions of the Effects of the Intervention on Child-Centered Literacy Orientation in Child and Parent Subgroups Controlling for Demographic Variation

Book sharing at bedtime

We analyzed book sharing at bedtime separately because of the focus of the intervention on sharing books with children as part of a regular bedtime routine. Overall, group 2 parents reported sharing books at bedtime more (3.9±2.6 nights per week) than did group 1 parents (2.5±2.7 nights per week; P=.002). A multiple linear regression controlling for parental education, ethnicity, and frequency of reading, as well as the sex and age of the children, found book sharing at bedtime more likely to be associated with the intervention (P=.05; R^2=0.19). In this model, the only additional factor independently associated with book sharing at bedtime was parents reporting that they read books themselves at least a few times per week (P<.001).

Potential sleep problems

No significant differences in prolonged bedtime struggles, parent-child cosleeping, frequent night waking, or how children fell asleep were found between groups 1 and 2, and these behaviors were not found to be associated with the frequency of bedtime book sharing or the presence of bedtime routines. Multiple logistic regression analysis was performed on the sleep variables controlling for intervention status, age of the children, and parental ethnicity,

age, and education. Bedtime struggles were associated with younger parental age (OR, 0.89; 95% CI, 0.80-0.99; P=.03; R^2=0.19) and fewer children at home (OR, 0.52; 95% CI, 0.31-0.88; P=.02). Parent-child cosleeping (OR, 0.06; 95% CI, 0.02-0.24; P<.001; R^2=0.26) and frequent night waking (OR, 0.40; 95% CI, 0.17-0.95; P<.05; R^2=0.08) were associated with less frequent falling asleep alone in the child's own bed. Usually falling asleep alone in the child's own bed was associated with non-Hispanic white ethnicity (OR, 11.7; 95% CI, 2.2-63.3; (P=.004; R^2=0.16) and older parents (OR, 1.08; 95% CI, 1.01-1.15; P=.02). Usually falling asleep in front of the television was associated with older age of the child (OR, 1.07; 95% CI, 1.00-1.16; P=.05; R^2=0.05).

Anticipatory guidance

Parents in group 2 reported receiving more anticipatory guidance about safety (P=.03), sleep behavior (P=.02), and how to share books with their child (P<.001) than did parents in group 1. No significant differences between groups 1 and 2 were found for anticipatory guidance about the child's interests (P=.30) or bedtime routines (P=.30).

Comment

The principal finding of our study is that when pediatric primary care providers gave children's books to low-income parents along with the information about why, how, and when to share books with young children, parents were more likely to look at books with their children. Not only did they share books with their children more often, but they also reported that sharing books with their child was one of their favorite things to do together. In particular, book sharing as part of toddlers' bedtime routines was more common in families receiving the intervention, which targeted bedtime. While parental ethnicity and education and age or sex of the child were not associated with CCLO in a logistic regression model, the intervention and parental reading habits were independently associated with having CCLO.

Significant positive effects of this intervention on CCLO were found regardless of child age and parental education, the 2 demographic factors that were significantly different between groups 1 and 2. In addition, effects of this

intervention seemed strongest in the subgroups that might be expected to be least likely to engage spontaneously in literacy-promoting activities with their children. Higher odds ratios (Table 2) in subgroups in which parents had not graduated from high school compared with those with at least high school equivalency suggest stronger effects of the intervention when parents have less education. Alternatively, a ceiling effect of the intervention may be present in families with more education. Single-parent families showed significant responses to the intervention, while the effect of the intervention in the subgroup of families with couples married or living together did not reach significance, suggesting that the more isolated parents benefited more from the intervention. An alternative interpretation, however, would be that the smaller number of married parents limited the power of the analysis to detect differences in this subgroup. In our analysis, the ethnic group with the largest odds ratio for the effect of the intervention on CCLO was Hispanic. It is interesting to speculate that immigrant families may be least likely to believe that reading to infants and toddlers is beneficial or desirable and that they may be the most receptive to suggestions from their health care provider about reading to their children. When singled out, the African American subgroup had a 20% higher CCLO in group 2 than in group 1 families; however, this was not a statistically significant difference, probably because the subgroup was so small that the power of the analysis was seriously limited and may have led to a type II error.

Our primary hypothesis was confirmed. We found more book sharing at bedtime in group 2 than in group 1 families. However, our second hypothesis was not confirmed. We found no significant difference between group 1 and group 2 families in the frequency of potential sleep-related problems or in the way children usually fell asleep. In a regression analysis adjusting for demographic factors, prolonged bedtime struggles were associated with younger parent age and fewer children at home, suggesting a first-child or only-child effect. Because we did not obtain data on birth order, we could not test this hypothesis. The association between both frequent night waking and parent cosleeping and children who rarely fall asleep alone confirms the findings of others.[23,24] We found no significant differences between groups 1 and 2 in the reported anticipatory guidance from primary care providers about bedtime routines, suggesting that the sleep-promoting aspects of the intervention were not

strongly emphasized by the providers. Because the mean age of children in group 2 at the time of the interview was 19.6 months, the average child in our study would have begun the intervention after the first birthday, so sleep routines were already solidly established. To effect a change in how children are put to bed and how they fall asleep and, therefore, on potential sleep problems, we believe that the intervention would need a stronger emphasis on children learning to fall asleep alone and that it should begin by 4 to 6 months of age,[19] when establishment of bedtime routines begins.

Our study evaluated the early effect of giving children's books and anticipatory guidance to promote literacy to low-income families at only 2 office visits. The duration of the effect of the intervention cannot be interpreted from this study, and we cannot determine the optimal age of intervention or the optimal number of books necessary for an optimal outcome. Would more books and a more consistent repeated emphasis on the promotion of literacy have a more beneficial outcome? Will the development of child language or early school performance be enhanced by this or similar interventions? Longer controlled prospective studies are needed to answer these critical questions.

Summary

Our findings of increased CCLO in low-income families who have received books and anticipatory guidance from their pediatric primary care providers are consistent with the findings of Needlman et al.[16] Our study extends these findings because we controlled for the numbers of books each child received and the duration between the intervention and the interview. We also controlled for child development by limiting our study to families with healthy children of a narrower age range. Our larger sample allowed us to study the effects of the intervention on subgroups within the low-income population, in which we found greater effects in families that might be expected to be at greatest risk for reading failure. Although families in group 2 shared books more often at bedtime, this intervention did not sufficiently affect how children fell asleep and, therefore, did not affect potential sleep-related problems.

Limitations

A source of possible error within this study was the measurement of literacy

orientation by asking parents about their practices and preferences rather than by observing the home environment and parental behaviors in the home. Parents were, however, not told of our interest in literacy, and the questions used to determine CCLO were asked early in the interview, before questions about parental reading, library cards, or books in the home. The questions were open-ended, and no prompts specific to reading were given. The same research assistant interviewed parents in both groups, so interviews were conducted and scored consistently; however, because of the study design, the research assistant was not blinded to the group or study hypothesis. Because the interview was highly structured with specific prompts for key variables, the interviewer was given almost no leeway in interviewing parents, so we believe the lack of blinding had little effect. The study design was not randomized, because the study was an evaluation of a new clinic-wide program, so historical controls were used as the comparison group (group 1). Every effort was made to select similar subjects for the 2 study groups. The samples in the African American subgroup and the subgroup of parents who were married or living together were small, limiting the power of analysis of CCLO. Therefore, the nonsignificant findings for these subgroups should be interpreted with caution. In group 2, the children were younger and the parents were more educated; however, we controlled for this variation in the multivariate analyses.

Conclusions

Our study results suggest that a simple and relatively inexpensive intervention, ie, the provision of developmentally appropriate books and educational materials at well-child visits by a large and diverse group of primary care providers, increased the reported enjoyment of low-income parents and their participation in child-centered activities to promote literacy. Pediatric primary care providers serving underserved populations may have a unique opportunity to encourage these behaviors and may, thereby, encourage the development of emergent literacy and language skills in educationally at-risk low-income children.

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Editor's Note: This study is a "twofer": first, it describes an easy, inexpensive, and effective intervention to increase reading to children, and second, it can be done in the resident's continuity clinics. Teach them early . . . in both cases.—*Catherine D. DeAngelis, MD*

Reprints: Pamela High, MD, Infant Development Center, Women & Infants Hospital, 101 Dudley St, Providence, RI 02905.

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