

Child Centered Literacy Orientation: A Form of Social Capital?

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ABSTRACT. *Objective.* To describe the home literacy environment and to identify financial, human, and social capital variables associated with the presence or lack of Child Centered Literacy Orientation (CCLO) in families with young children who regularly attend pediatric primary care clinics.

Design. Cross-sectional case-control analysis of structured parent interviews conducted in two hospital-based and four community-based pediatric clinics in New England.

Subjects. Parents of 199 healthy 1- to 5-year-old children whose mean age was 30 ± 15 (SD) months were interviewed. Parents were primarily mothers (94%) with a mean age of 28 ± 7 (SD) years 60% of whom were single. Educational levels of study parents varied: 43% had not graduated from high school, 29% had a high school equivalency, and 28% had at least a year of college or vocational training. This was a multiethnic parent group. Sixty-five percent were bilingual or non-English speaking. Fifty-eight percent were born outside of the continental United States. Parents were primarily of low-income status with 85% receiving Women, Infant, and Children (WIC) food supplements, Aid to Families With Dependent Children, and/or Medicaid.

Results. Half of the parents interviewed reported that they rarely read books. Sixty percent of children had fewer than 10 books at home and two-thirds of these households contained fewer than 50 books total. When asked open-ended questions, 28% of parents said that sharing books with their child was one of their three favorite activities together, 14% said that looking at books was one of their child's three favorite things to do, and 19% reported sharing books at bedtime at least six times each week. Thirty-nine percent of families had at least one of these three literacy-related responses present and so were said to have a CCLO. A backwards stepwise multiple logistic regression on CCLO was performed with family financial, human, and social capital variables. Parents married or living together (odds ratio [OR] 2.56, 95% confidence interval [CI] = 1.21–5.42), higher adult-to-child ratios in the home (OR 1.92, 95% CI = 1.20–3.05), households speaking only English (OR 2.67, 95% CI = 1.24–5.76), parents reading books themselves at least a few times a week (OR 2.86, 95% CI = 1.38–5.91),

and homes with more than 10 children's books (OR 3.3, 95% CI = 1.6–6.83), were all independently and significantly associated with the presence of CCLO. Older child age and higher parent education remain in the model but were not significant at the $P < .05$ level. Ethnicity and income status were dropped for lack of additional significance from this model, which described 24% of the variance in CCLO.

Conclusion. Although two-parent families and higher adult-to-child ratios in the home appear to be social capital variables with protective effects, low-income, single-parent, and minority or immigrant families are at significant risk for lacking both children's books and a CCLO. We suggest that CCLO may itself be another form of social capital reflecting parental goals and expectations for their children. We speculate that interventions which provide children's books and information about reading with children to impoverished families with young children may facilitate more parent-child book sharing. Pediatricians and other primary care providers serving underserved populations may have a unique opportunity to encourage activities focusing on young children and promoting literacy. *Pediatrics* 1999;103(4). URL: <http://www.pediatrics.org/cgi/content/full/103/4/e55>; *infants, children, reading, literacy, social capital, family literacy, low-income families, poverty.*

ABBREVIATIONS. CCLO, Child Centered Literacy Orientation; WIC, Women, Infants, and Children (food supplement program); OR, odds ratio; CI, confidence interval.

Inadequate levels of literacy represent a major problem in the United States. Over twenty million adult Americans can perform, at best, only limited reading tasks such as locating the time or place of a meeting on a form, while another twenty million cannot perform even these simple tasks. An additional fifty million American adults function at a slightly higher, although still quite limited, level of reading comprehension.¹ The ramifications of failing to address deficient literacy are far-reaching. Poor literacy skills are linked to decreased productivity, high unemployment, low earnings, and high rates of both welfare dependency and teenage parenting.² An increasing number of studies suggest that individuals who lack basic reading and writing skills cannot compete for jobs and resources in today's technologically-advanced, computer-based society.³ The desperate need to improve national literacy levels for school-aged children is evidenced in the US Department of Education's 1994 *Reading Report Card for the Nation and States* which found that only 25% of fourth grade children, 28% of students in the 8th grade, and 34% of those remaining in school in the 12th grade

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could read at their grade level.⁴ These alarmingly low figures for reading achievement represented a statistically significant decline in reading proficiency from the 1992 *Report Card*.⁵ Reading achievement was lowest in African-American and Hispanic 4th grade children and correlated negatively with poverty and low parent education.

It is readily evident that literacy-promoting interventions made during the childhood years make optimal use of limited resources, because children who do not learn to read are at great risk of failing to attain basic adult literacy. Frequency of storybook reading has been identified as a primary contributor to the development of emergent literacy skills in early childhood^{6,7} and is widely accepted as a major factor in success at reading in school.⁸⁻¹⁰ Recent studies have shown that implementation of picture-book sharing interventions targeting preschool-aged children can significantly increase vocabulary acquisition,¹¹⁻¹³ and show the largest impact on children with lower initial vocabulary scores.⁹

This act of parents sharing books with their very young children and teaching them that looking at books together is an enjoyable experience can be considered to be an investment in their child's future. As conceptualized by Coleman¹⁴ in 1988, this kind of investment or product can be considered to be the result of family background that is made up of three types of capital that support child development. As he suggests, the first is the families' monetary and other concrete assets that constitute their *financial capital*. The second is the parents' cognitive skills and educational attainment or their *human capital*. Socioeconomic status, ethnicity, and language skills may be included in this category. The third type of capital, *social capital*, as defined by Coleman, refers to social networks and social interaction, as well as expectations, trust and information, that facilitate mutual benefit. Social capital, as well as the other two forms of capital, exist in communities, as well as in families. Recent work has linked greater social capital with lower rates of high school drop out,^{14,15} fewer behavior problems in young children,¹⁶ more positive behavioral and developmental outcomes in high-risk preschool children¹⁷ and lower levels of youth violence within urban communities.¹⁸ Measures used to represent the presence of social capital in these studies have included two-parent families (more parental resources available to the child), no more than two children in the family (less dilution of parental attention and resources), fewer moves (less disruption of social relations), mother's expectation for child's educational attainment (represents family norms and investment), regular church attendance (close community involvement and support), and mother's perceptions of social support (proximal support within a small circle of family and friends) and neighborhood support (the community-at-large is looking out for all their children).

In 1991 Needlman et al¹⁹ suggested that family literacy orientation could be increased by a simple intervention in which pediatricians distributed children's books to children of low-income parents at their health maintenance visits. This conclusion was

reinforced by our own studies demonstrating significantly more child centered literacy orientation (CCLO) in intervention families with young children who had received children's books at each of two well-child visits compared with historical control families²⁰ and in Hispanic families receiving bilingual board books and educational materials as part of their well-child care.²¹ In the current study, we hypothesize that there exists a readily identifiable set of financial, human, and social capital factors within a pediatric continuity clinic population that is associated with a presence or absence of a literacy-promoting environment for children. In particular, we hypothesize that families with less social capital, as represented by single-parent families and fewer adults per child at home, and those with less financial capital, represented by fewer books at home, will be less likely to have a CCLO in their homes. By identifying these factors, we hope to heighten awareness of the problem of low literacy in the pediatric community and to assist primary care providers in targeting interventions toward high-risk families in this time when the expenditures of resources must be rationally justified.

SUBJECTS AND METHODS

Subjects

This was designed as a cross-sectional, descriptive study of a convenience sample of families with young children regularly attending pediatric primary care clinics. The criterion of regular clinic attendance was selected so that this sample might serve as a comparison group for subsequent intervention studies. One hundred ninety-nine parents of eligible children were enrolled in this study and interviewed, as described below. One hundred eight parents were recruited from two urban university hospital-based primary care pediatric practices, while 91 parents were from four urban neighborhood health center pediatric primary care sites. The initial 51 interviews were conducted as baseline data for an intervention study of literacy promotion²⁰ in the summer of 1994. Interviews in the Health Centers and in the second hospital-based clinic were conducted in the summer of 1995. All these practices serve as providers of primary care for predominantly low-income families from the surrounding multiethnic urban New England communities. In the health centers over two-thirds of the families served are Hispanic.

Children

Children were eligible if they were 1 to 5 years old at the time of the interview and had attended their previous two well-child visits in the practice where the interview was conducted. Additional eligibility criteria were: birth weight of at least 5 pounds, hospitalization for fewer than 14 days since birth, and absence of major congenital anomalies, sensory deficits, or developmental delays.

Parents

Parents were eligible to be interviewed if they were primary caregivers living with their child and had brought their child to the last two well-child visits in the practice in which the interview was conducted. In addition, in the hospital-based pediatric practices, all eligible parents spoke English well enough to participate in the interview. In the neighborhood health centers the research assistant was bilingual and conducted interviews in either English or Spanish. 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. Almost 30% of families screened did not meet eligibility criteria. Of these one-third had parental exclusions, usually language and two-thirds had child exclusions, usually hospitaliza-

tions totaling more than 14 days. Only 2 parents refused to be interviewed.

Procedures and Measures

Parent Interview

The interview required 8 to 12 minutes to complete and consisted of 88 questions based, in part on the interview developed by Needlman¹⁹ and the Sleep Habits Questionnaire.²² The interview was highly structured and began with demographic questions followed by two open-ended questions: "What are your child's three favorite things to do other than eating and sleeping?" and "What are your three favorite things to do with your child?" If vague answers were given such as "play," then parents were asked to give examples or to name any special toys. The interviewer asked how many trucks, cars, dolls, blocks, and books their child has at home. Parents were asked about their own television and reading habits and asked to estimate the total number of books in their homes. Questions about child behavioral concerns, television viewing, bedtime routines, bedtimes struggles, night-waking and cosleeping were included as well as ones about physician practice and patient satisfaction. All interviews were conducted in the clinic waiting or examination rooms by one of four research assistants who received a daylong training by the same trainer.

Outcome Variables

As previously defined,²⁰ the primary outcome variable was derived from three component questions and is a composite dichotomous score. This composite variable, CCLO, was considered to be present if the response to one or more of these three component questions were positive: 1) "What are your child's 3 favorite things to do other than eat and sleep?" 2) "What are your three favorite things to do with your child?" or 3) "How many nights each week do you share books with your child to prepare her for sleep?" Questions 1 and 2 were considered to be positive if looking at books was mentioned and question 3 was positive if parents shared books at bedtime at least 6 nights per week. A minimum of 6 nights was chosen as being indicative of a firmly established family routine. In devising the dichotomous CCLO variable we wanted to distinguish families with a particularly strong focus on enjoying literacy-related activities with their young child. The additional outcome variable analyzed was the presence of at least 10 children's books in the home, the necessary tools or financial capital required to participate in child-focused literacy-promoting activities.

Predictor Variables

For multivariate analyses, the theoretical framework of financial, human, and social capital was used to categorize demographic and environmental predictor variables. Families receiving Medicaid health insurance, Aid to Families with Dependent Children, or Women, Infant, and Children (WIC) food supplements, all forms of public assistance, were classified as being of low-income status that we have considered to be a financial capital variable. Parental ethnicity and education dichotomized at having at least a year of posthigh school training, child and parent age, and parents reporting that they read books themselves at least a few times a week were human capital variables. Language in the home was dichotomized by those in which English was the only spoken language, and those in which any other language was commonly spoken in addition to or exclusive of English. This was also considered to be a human capital variable. The two social capital variables were: 1) parents with partners, that is those families with parents who were married or living together, and 2) the ratio of adults to children in the home. This second variable was chosen to reflect the multigenerational quality of many of these households, as well as the number of children present and therefore requiring adult attention. The presence of at least 10 children's books was an additional financial capital variable used only in the Step 2 analysis of CCLO.

Data Analysis

This was a case-control analysis comparing the presence or absence of CCLO by human, financial, and social capital variables. Univariate analysis used the χ^2 statistic for evaluation of categor-

ical data and the Student's *t* test for dimensional data. Multivariate analysis was used to evaluate the relationship of predictor variables to the major outcome variable, CCLO, and on having more than 10 children's books in the home. The statistical package STATA version 4.0 was used to perform backward stepwise multiple logistic regressions. Variables with significance greater than 0.4 were removed in a stepwise fashion and at each step all dropped variables were rechecked against a reentry criteria of $P < .2$.

RESULTS

Demographic Characteristics

The mean age of the 199 children in this study was 30.3 months old with a standard deviation of 5.4 months; half of them were girls. Although 149 (75%) received Medicaid, 42 (21%) children had private medical insurance. One hundred eighty-six (94%) parents interviewed were mothers, 195 (98%) were birth parents, and their mean age was 28.1 years with a standard deviation of 7.0 years. Although 85 (43%) parents had not completed a high school education, 56 (28%) had at least 1 year of college or vocational training. Twenty-seven (14%) interviewed parents were students and 60 (30%) worked full- or part-time. This was a culturally diverse group of parents. African-American parents represented 17% ($n = 33$) of the sample, while 94 (47%) were Hispanic, 40 (20%) were Non-Hispanic white and 32 (16%) were of many other ethnicities. Of these Hispanic parents, 17 (18%) were born in the continental United States, while 35 (37%) were born in the Dominican Republic, 17 (18%) were from Guatemala, 14 (15%) were born in Puerto Rico, and the remaining 11 (12%) were from 6 other countries. Seventy-seven (82%) Hispanic parents and 29 (91%) of the parents in the diverse "other" ethnic category were born outside of the continental United States. One hundred twenty-two (61%) families spoke multiple languages or Spanish only at home. One hundred sixty-seven (85%) families received public assistance as either Medicaid, the WIC food supplement program or Aid to Families with Dependent Children and so were considered to be of low-income status.

Home Literacy Environment

In describing the home literacy environment of these families, we found that half of parents reported that they rarely or never read books or newspapers themselves while only 14 (7%) rarely watched TV. Over half of these households had fewer than 10 children's books; in fact, almost a quarter of these homes contained fewer than 10 books total. While sixty-seven (34%) parents reported having library cards, only 37 (19%) had gone to the library with or for their child.

In univariate analysis we found no significant differences in the proportion of parents reporting that they read books themselves, at least a few times a week, in Hispanic (49%) compared with non-Hispanic parents (50%) or in immigrant parents (47%) compared with those born in the continental United States (53%). In contrast, Hispanic families were less likely than Non-Hispanic families to have more than 10 children's books in their homes (32% vs 59%, $P < .001$), and parents born in the continental United

States were more likely than immigrant parents to have more than 10 children's books (64% vs 33%, $P < .001$).

A multiple logistic regression controlling child age, parent education, income status, parents in the home, adult-to-child ratio, parental reading habits, and languages spoken at home, found that minority families were significantly less likely than Non-Hispanic white families to have at least 10 children's books at home. Hispanic (odds ratio [OR] = 0.07, 95% confidence interval [CI] = 0.02–0.22, $P < .001$) families and those of diverse other ethnic group (OR = 0.07, 95% CI = 0.02–0.25, $P < .001$), the two groups with large proportions of immigrant parents, were 14 times less likely to have more than 10 books for their children at home. African-American families (OR = 0.23, 95% CI = 0.06–0.83, $P = .03$) were 4 times less likely to have more than 10 children's books available for their young children. In this model, homes with older children (OR = 1.03, 95% CI = 1.01–1.05, $P = .01$) and homes with two parents (OR = 2.53, 95% CI = 1.17–5.45, $P = .02$) were also significantly more likely to have 10 children's books,

the financial capital that could support the presence of CCLO.

CCLO

Twenty-eight (14%) parents reported that one of their child's three favorite things to do was to share books; 56 (28%) parents reported that one of their three favorite things to do with their child was to share books; and 37 (19%) parents reported that they shared books at bedtime 6 or 7 nights each week. The composite CCLO score was positive in 77 (39%) of families.

Tables 1 and 2 present prevalence data and univariate analysis of CCLO within child demographic groups. No differences in CCLO were found between boys and girls. Significantly less CCLO was found in families with less parental education; in Hispanic and other minority families; in homes where languages other than English are spoken and in those in which parents were born outside the continental United States; in single-parent families and in those in which the children at home outnumbered the adults; in low-income families and in those

TABLE 1. Univariate Analysis of CCLO Within Demographic Groups

Demographic/Environmental Characteristics ($n = 199$)	Without CCLO 122 (61%)	With CCLO 77 (39%)	X ²	P
Child gender				
Male ($n = 99$)	61 (62%)	38 (38%)	.008	.93
Female ($n = 100$)	61 (61%)	39 (39%)		
Parent education				
Not high school graduate ($n = 85$)	63 (74%)	22 (26%)	17.50	<.001
High school graduate/GED ($n = 58$)	37 (64%)	21 (36%)		
≥1 Year college/voc ($n = 56$)	22 (39%)	34 (61%)		
Parental ethnic groups				
Non-Hispanic white ($n = 40$)	15 (27%)	25 (63%)	15.27	.002
African-American ($n = 33$)	18 (55%)	15 (45%)		
Hispanic ($n = 94$)	68 (72%)	26 (28%)		
Other ($n = 32$)	21 (66%)	11 (34%)		
Languages spoken at home				
English only ($n = 70$)	31 (44%)	39 (56%)	18.93	<.001
Multilingual ($n = 80$)	50 (63%)	30 (38%)		
Spanish only ($n = 49$)	41 (84%)	8 (16%)		
Parental birth country				
Continental United States ($n = 85$)	45 (53%)	40 (47%)	4.38	.04
Foreign born ($n = 114$)	77 (68%)	37 (32%)		
Adult-to-child ratio				
At least 1:1 ($n = 110$)	58 (53%)	52 (47%)	7.63	.006
Less than 1:1 ($n = 89$)	64 (72%)	25 (28%)		
Parental marital status				
Single/separated ($n = 118$)	85 (72%)	33 (28%)	12.74	<.001
Married/live together ($n = 79$)	37 (47%)	42 (53%)		
Parent occupation				
Employed ($n = 60$)	29 (48%)	31 (52%)	6.13	.05
Student/not employed ($n = 23$)	15 (65%)	8 (35%)		
Not student or employed ($n = 116$)	78 (67%)	38 (33%)		
Low income status/public assistance				
Medicaid, Aid to Families With Dependent Children, or WIC ($n = 167$)	112 (67%)	55 (33%)	14.52	<.001
No Medicaid, Aid to Families With Dependent Children or WIC ($n = 32$)	10 (31%)	22 (69%)		
Frequency parent reads a book				
Rarely/never ($n = 100$)	71 (71%)	29 (29%)	7.96	.005
At least a few times per week ($n = 99$)	51 (52%)	48 (48%)		
Total books in the home				
<50 Books ($n = 133$)	92 (69%)	41 (31%)	11.08	.001
>50 Books ($n = 65$)	29 (45%)	36 (55%)		
Children's books in the home				
Child has ≤10 books ($n = 107$)	84 (79%)	23 (22%)	28.86	<.001
Child has >10 books ($n = 92$)	38 (41%)	54 (59%)		

TABLE 2. Univariate Analysis of Child and Parent Age and CCLO

Demographic Characteristics Mean ± SD (<i>n</i> = 199)	Without CCLO Mean ± SD (<i>n</i> = 122)	With CCLO Mean ± SD (<i>n</i> = 77)	<i>t</i>	<i>P</i>
Child age, 30.2 months ± 15.4	29.2 ± 14.1	31.9 ± 17.4	-1.17	.24
Parent age, 28.1 years ± 7.0	27.6 ± 6.7	28.9 ± 7.4	-1.30	.20

in which parents are not used; in families in which parents report that they rarely or never read books themselves; and in households with fewer than 50 books total. In addition, significantly more CCLO was found when children had at least 10 children's books at home. No clear trend toward increasing CCLO with increasing child age within this population was demonstrable using univariate analysis alone. No relationship between parent age and CCLO was found.

As shown in Table 3, two multiple logistic regressions of CCLO were performed. The first or Step 1 Regression included human and social capital variables that were demographic characteristics of these families. In this first regression, CCLO was significantly and independently associated with parents being married or living together (social capital), higher adult-to-child ratios in the home (social capital), older child age (human capital), parents with at least a year of college or vocational training (human capital), and homes in which English was the only language spoken (human capital). This language variable was dichotomized at English only versus bilingual and non-English speaking households based on the univariate data showing lower CCLO rates in bilingual compared with English only households. We speculate that bilingualism in this primarily low-income population is a marker for less acculturation. Parent age, ethnicity, and income status were dropped from the multivariate model because of lack of additional significance. In the Step 2 Regression the environmental/behavioral factors that may have directly reflected parental literacy orientation were added to the regression and a second analysis was performed. These additional variables were parental reading habits (human capital) and numbers of children's books in the home (financial capital). Again the social capital variables of having two-parent families and higher adult-to-child ratios, as well as the human capital factors of having English

as the only language spoken in the home were significantly and independently associated with CCLO. However, parents reading books at least a few times a week and homes with more than 10 children's books were also significant factors. Older child age and more parent education remain in the model but are no longer significant at the *P* < .05 level. Again parent age, ethnicity, and income status were dropped due to lack of significant additive effect. The first model described 17% of the variance in CCLO compared with 25% in the second model.

DISCUSSION

The current study seeks to describe the home literacy environment of healthy young children from mostly low-income families who regularly attend pediatric primary care clinics in an effort to identify factors associated with lack of a CCLO. We were saddened to discover the degree of impoverishment in the home literacy environment in some of the families in our study with almost one in four homes containing fewer than 10 books of any kind and over half of these parents reporting that they rarely read. Overall, we found that 39% of these families demonstrated a strong focus on child centered literacy, however, looking at only low-income families our rate was 33%. This is consistent with the 33% "literacy orientation" found in Needlman's original work¹⁹ and our own 33% CCLO at baseline in our pilot intervention study,²⁰ which comprises 25% of this study sample.

Surprisingly, demographic factors of the children studied, in particular child age, was not found to be as strong a predictor of the presence of child-focused literacy-promoting behaviors in the home as expected. However, having the tools or financial capital required for CCLO, that is, having at least 10 children's books at home appeared to be particularly strong positive indicator or influence. Noting the especially low rates of CCLO in Hispanic, in bilin-

TABLE 3. Multivariate Analysis of Child Centered Literacy Orientation and Social, Human and Financial Capital Variables

Demographic/Environmental Characteristics	Step 1 Regression* <i>R</i> ² = 0.17	Step 2 Regression* <i>R</i> ² = 0.24
	OR (95% CI) <i>P</i>	OR (95% CI) <i>P</i>
Social capital		
Parents married or live together	2.46 (1.25-4.83) <i>P</i> = .009	2.56 (1.21-5.42) <i>P</i> = .01
Higher adult-to-child ratio	2.03 (1.30-3.15) <i>P</i> = .002	1.92 (1.20-3.05) <i>P</i> = .006
Human capital		
English only spoken in home	3.45 (1.70-7.01) <i>P</i> = .001	2.67 (1.24-5.76) <i>P</i> = .01
Older child age	1.02 (1.00-1.05) <i>P</i> = .04	1.02 (0.99-1.04) <i>P</i> = .14
Parents ≥1 year college/vocational	2.05 (1.00-4.26) <i>P</i> = .05	1.61 (0.74-3.52) <i>P</i> = .23
Parent reads books at least a few times per week	Not in model	2.86 (1.38-5.91) <i>P</i> = .005
Financial capital		
>10 Children's books in home	Not in model	3.30 (1.60-6.83) <i>P</i> = .001

Step 1 Regression is with demographic factors alone. Step 2 adds parental reading of books and number of children's books in the home into the regression.

* Parental age, ethnicity, and income status dropped due to lack of additional effect.

gual and Spanish only households, and in families when parents were born outside the continental United States, it is reasonable to speculate that lack of availability of high quality Spanish and other non-English language books appropriate for young children may limit the ability of immigrant parents to provide a literacy oriented environment for their children. Alternatively, immigrant families may be less likely to be aware that reading to young children is helpful or advocated.

As described in the paradigm of multiple risk and protective factors influencing child development related to social capital, we found that when there were two parents in the home as well as when there were higher ratios of adults to children, the environment was more likely to be conducive of optimal literacy development by having CCLO present. Although univariate analysis suggested multiple parental demographic indicators associated with lack of CCLO in these families, multivariate analysis of these factors suggested that the most important independent predictors of presence of CCLO were having the social capital of more adults than children at home and two-parent families and the human capital of living in homes where only English was spoken which, in this sample, may reflect acculturation. When a second step adding environmental/behavioral factors to this multivariate model was performed, having the financial capital of at least 10 children's books and having the human capital of parents who themselves read books more were also important additional factors. Although univariate analysis suggested an association of both parent ethnicity and low-income status with lack of CCLO, in a multivariate analysis including family size, constellation and language preferences, these factors lost their predictive value.

In our previous work we have found that, controlling parent education, ethnicity, and frequency of parental reading, as well as child sex and age, the odds of having CCLO for low-income families who received 2 children's books and educational materials at well-child visits was almost 5 times greater than historical controls. Effects of our intervention appeared to be strongest in subgroups that this current study has identified as being least likely to spontaneously engage in literacy-promoting activities with their children: in families with less education, in single-parent, and in Hispanic families. We speculated that immigrant families might be the most open to responding to the suggestion to read with their young children from their health care provider.²⁰

This study reflects a limited application of the social capital paradigm, using only the ratio of adults to children in the home and two-parent families as social capital variables. Other constructs such as neighborhood and peer social support and group membership are not addressed. Another limitation to this study is that families were enrolled as a convenience sample based on research assistant availability and targeting high volume clinic sessions rather than by consecutive clinic encounter. The strength of this design was that a wider group of families presenting to multiple clinic sites and ethnic groups

were included in the sample. This was a primarily low-income population and over two-thirds of children were younger than 3 years old. Findings may not be generalizable to other populations.

CONCLUSION

Using the construct of social capital, we have identified factors that may be protective of a CCLO within the family, namely two-parent families and those with more adult figures available to fewer children in the home. We would like to suggest that CCLO may be an additional measure of social capital within the family, reflecting parental goals and expectations for their children. This social capital variable is associated with other social capital variables as well as with human capital and financial capital.

The data presented identifies aspects of families that could impair children's literacy development and their subsequent potential to do well when they enter school. Some of the barriers, including parents not reading to children and not having books in the home, may be amenable to intervention, while the demographic characteristics are not. This study, which demonstrates significant need for literacy promotion in low-income pediatric clinic populations, taken together with other studies that demonstrate effectiveness of interventions targeting low-income pediatric clinic families with very young children,¹⁹⁻²¹ support the implementation of clinic-based literacy-promoting programs such as *Reach Out and Read*.²³ In addition, we have provided baseline data that may be used in program evaluation for these clinic-wide intervention projects that are generally lacking a control or comparison group.

By identifying specific factors associated with low literacy, we hope that we have provided a clearer picture of the populations at risk for not having a child-focused literacy orientation and that this effort may better facilitate the distribution of limited resources. Low-income, single-parent or immigrant families are at risk for lacking both children's books and a CCLO in their homes. These findings imply that interventions that provide children's books to impoverished families may facilitate more parent-child book sharing. Pediatricians and other primary care providers serving underserved populations may have a unique opportunity to encourage activities focusing on young children and promoting literacy.

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