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Pediatrics; originally published online June 2, 2014;

DOI: 10.1542/peds.2013-3710

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/early/2014/05/27/peds.2013-3710>

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American Academy of Pediatrics

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Disparities in Early Exposure to Book Sharing Within Immigrant Families

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KEY WORDS

children in immigrant families, immigrant, early childhood, emergent literacy, book sharing

ABBREVIATIONS

CHIS—California Health Interview Survey

CI—confidence interval

CIF—children in immigrant families

DBS—daily book sharing

FPL—Federal Poverty Line

OR—odds ratio

ROR—Reach Out and Read

Ms Festa conceptualized and designed the study, conducted the analysis, drafted the initial manuscript, approved the final manuscript as submitted, and is accountable for all aspects of the work; Ms Loftus aided in the design of methods and analysis of findings, and has reviewed and edited all parts of the manuscript; Dr Cullen provided methodologic oversight for the analysis, reviewed and edited all parts of the manuscript, approved the final version as submitted, and is accountable for all aspects of the work; Dr Mendoza contributed to the concept and design of the study, the acquisition of the data, its analysis and interpretation, and revision of drafts for intellectual content and approval of the final version, and is accountable for all aspects of the work; and all authors approved the final manuscript as submitted.

www.pediatrics.org/cgi/doi/10.1542/peds.2013-3710

doi:10.1542/peds.2013-3710

Accepted for publication Apr 7, 2014

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: Funded by Stanford University School of Medicine, Medical Scholars Program.

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.



WHAT'S KNOWN ON THIS SUBJECT: Parents in disadvantaged households are less likely to book share with their children during early childhood. These children are more likely to enter school with delays in emergent literacy and language skills, apparent as early as the age of 3.



WHAT THIS STUDY ADDS: This study examines the effect of parental immigrant status as a predictor of reading and sharing books with children. This research disentangles immigrant status from other variables thought to explain disparities in familial practices related to emergent literacy.

abstract

OBJECTIVE: This study examined the early developmental context of children in immigrant families (CIF), measured by the frequency with which parents share books with their children.

METHODS: Trends in the frequency with which parents report book sharing, defined in this analysis as reading or sharing picture books with their young children, were analyzed across immigrant and nonimmigrant households by using data from the 2005, 2007, and 2009 California Health Interview Survey. Stepwise multivariate logistic regression assessed the likelihood that CIF shared books with parents daily.

RESULTS: In this study, 57.5% of parents in immigrant families reported daily book sharing (DBS), compared with 75.8% of native-born parents. The lowest percentage of DBS was seen in Hispanic families with 2 foreign-born parents (47.1%). When controlling for independent variables, CIF with 2 foreign-born parents had the lowest odds of sharing books daily (odds ratio [OR]: 0.61; 95% confidence interval [CI]: 0.54–0.68). When stratified by race/ethnicity, separate multivariate logistic regressions revealed CIF status to be associated with lower odds of DBS for Asian (OR: 0.56; 95% CI: 0.38–0.81) and Hispanic CIF (OR: 0.49; 95% CI: 0.42–0.58).

CONCLUSIONS: There is an association between the lower odds of DBS and parental immigrant status, especially for Hispanic and Asian children. This relationship holds after controlling for variables thought to explain differences in literacy-related practices, such as parental education and income. Because book sharing is central to children's development of early literacy and language skills, this disparity merits further exploration with the aim of informing future interventions. *Pediatrics* 2014;134:1–7

The national discourse on school-readiness has recently turned its focus to preschool participation as a means of improving the academic performance and trajectory of disadvantaged children. For minority children, documented disparities in language and cognitive development have emerged by the time of preschool enrollment at 3 years of age.^{1,2} As a result, the early home environment has gained increasing attention as a driver of disparities in school-readiness and subsequent academic outcomes.^{3–5} Practices such as book sharing, defined in this study as parental report of reading or looking at picture books with children younger than 6 years of age, have been the focus of much of this increased interest. Although critical cognitive and language development occur alongside the acquisition of early literacy skills from birth through 5 years of age, less is known about how practices such as book sharing shape this development, especially throughout children's first 3 years.⁶ Research examining household practices tied to early literacy have identified that young children with parents who are less likely to book share are at greater risk of delays in their school-readiness.⁷ These children tend to live in low-income households and have Hispanic or African American mothers.^{8,9} Although there has been limited assessment of parental practices related to emergent literacy before the age of 3, there is perhaps less understanding of how the dynamics of immigrant households might independently affect exposure to reading in early childhood. Children in immigrant families (CIF), defined as those children who are either foreign-born or born in the United States to immigrant parents, presently account for one-quarter of the nation's child population and are predominately Hispanic.¹⁰ These children represent the most ethnically diverse and rapidly growing demographic in the United

States. They are projected to comprise more than one-third of the child population, and drive nearly all of the growth in the United States workforce over the next several decades.¹⁰ Thirty percent of CIF reside in households with an income below the poverty line compared with 19% of children with native-born parents.¹¹ Poverty is most pronounced among Hispanic immigrant families, with 34% of first-generation children, and 26% of second-generation children living in poverty that is likely to persist into adulthood.¹² Although Hispanic CIF will soon account for the majority of expansion in our national workforce, these children are the most likely to enter school delayed in their early literacy and math skills, and remain at a high risk of poor educational and occupational outcomes.^{2,13}

As the connections between adult outcomes, school-readiness, and emergent literacy have become increasingly established,^{14–16} both the American Academy of Pediatrics and the Bright Futures guidelines have stressed the importance that pediatricians educate parents on practices that promote early literacy and language development in the home.^{17,18} Programming available through the primary care setting, such as Reach Out and Read (ROR) is well established as a means of promoting early literacy and language development through the medical encounter,^{19,20} but less is known about its impact in the context of immigrant families. Although it has been suggested that immigrant families are more likely to read to children if provided with books during the well-child visit,²¹ little else is known about their baseline practices related to early literacy and language development, and how these practices might differ from those in the homes of children with native-born parents. The purpose of this study was to explore whether and how book sharing with young children might vary in the setting of the immigrant household.

METHODS

Sample

The California Health Interview Survey (CHIS), the largest state health survey in the nation, is a telephone survey of a random statewide sample of households, conducted biennially from 2001. Surveyed households were selected by means of random-digit-dialing, with interviews conducted in English, Spanish, Chinese (Mandarin and Cantonese), Vietnamese, and Korean. The survey was divided into 3 categories: adult, adolescent, and child, with each household permitted 1 respondent per age group. The child interview was conducted with a parent or guardian.²² To yield a larger sample of participants less than 6 years of age, we merged the data from the 2005, 2007, and 2009 child samples.

Measures

The frequency of parents sharing books with their children was assessed in 2 ways. The first measure describes the frequency of book sharing in response to the CHIS prompt adapted from the National Survey of Early Childhood Health: "In a usual week, about how many days do you or any other family members read stories or look at picture books with [child younger than 5 in the home]?" Parental report of frequency was recorded as: "every day," "3 to 6 days per week," "1 to 2 days per week," or "never." The second measure dichotomized the outcome of book sharing, assessing whether parents read or look at picture books with children on a daily basis. Covariates used in our analyses included parental education, household income, race and ethnicity, immigrant status of the family, language spoken in the home, and access to health care. Categories of parental education were collapsed into less than high school educated, high school graduate, and college graduate. Household income was modeled as a dichotomous variable with respect to

200% of the Federal Poverty Line (FPL), as this threshold is used widely to determine eligibility for the Children's Health Insurance Program, and families earning less than this amount are commonly defined as low income.^{23,24} Children's race and ethnicity were categorized as non-Hispanic white, non-Hispanic black, Hispanic, and Asian. These groups were further subdivided to represent CIF, defined as children who are either foreign-born or have at least 1 foreign-born parent and are native born children. Language spoken in the home was divided according to households that speak only English, English and another language, or no English. In the final model, language was modeled as a dichotomous variable of any English, or no English spoken in the home. Any English is a combined category, comprising those households that speak only English, and English and another language. Health care access was measured by parental report of a usual source of medical care and treated as a binary variable.

Analyses

Bivariate analyses were performed with χ^2 tests between each predictor and the reported frequency of book sharing in the CHIS data set. Independent variables were parental education, household income, race and ethnicity, immigrant status, language spoken at home, and access to health care. All survey data were assigned weights to adjust for disproportionate sampling. The outcome of book sharing was dichotomized in the logistic regression model, dividing the sample into those who reported daily book sharing (DBS) and those who did not. This was done to characterize parents who had reported the most consistent patterns of reading or sharing picture books with their children. In the first regression model, for all sampled children, predictors included child's age

and gender, parental education, household income, immigrant status, and English spoken in the home (yes/no). We also stratified the sample by race and ethnicity, using the same covariates, to examine the strength of predictors within each subgroup. Variables for each regression model were selected by using a stepwise algorithm, with a maximum *P* value of 0.10 as the criteria for inclusion. When dropped from the model by the stepwise algorithm, variables of a priori interest (income, language spoken in the home, parental education, and usual source of health care) were reintroduced. In each regression, we controlled for complex sample design. Statistical analyses were performed by using Stata SE (version 12.1; Stata Corp, College Station, TX).

RESULTS

A total of 15 133 parents of children under the age of 6 were sampled with respect to their book sharing practices in the 2005, 2007, and 2009 iterations of the CHIS. Of those sampled, 14 512 children with racial and ethnic identifiers were included in the analysis. Overall, 48.6% of the children were non-Hispanic white, 3.4% were non-Hispanic black, 36.0% were Hispanic, and 12.0% were Asian, with CIF comprising the majority of the latter 2 groups (69.9% and 87.4%, respectively). The demographic characteristics of children included in the analysis are summarized in Table 1. Across all racial and ethnic groups, Hispanic CIF are the most likely to reside in low-income households and have the least educated parents. Basic descriptors of each racial and ethnic group, by familial immigrant status, are summarized in Table 2.

Cumulatively, 67.1% of children under the age of 6 share books with parents daily, and 21.8% do so between 3 and 6 days per week. Approximately 7.2% of

TABLE 1 Characteristics of Children Younger Than 6 in CHIS 2005–2009 (N = 14 512)

Child Characteristics	CHIS 2005–2009, %
Age	
<12 mo	15.4
1–2 y	17.3
2–3 y	16.7
3–4 y	16.5
4–5 y	34.1
Race/ethnicity	
Non-Hispanic white	48.6
CIF	79.5
Non-CIF	20.5
Non-Hispanic black	3.4
CIF	19.2
Non-CIF	80.8
Hispanic	36.0
CIF	69.9
Non-CIF	30.1
Asian	12.0
CIF	87.4
Non-CIF	12.6
Parental education	
Less than high school	15.2
High school diploma/ equivalent	32.5
BA or more	43.3
Household income	
Income <200% FPL	35.5
Income >200% FPL	64.5
CIF	
CIF, one-foreign born parent	16.7
CIF, two-foreign born parents	30.6
Native born parents (Non-CIF)	52.7

children share books with parents 1 to 2 days per week, and 3.9% of parents report never reading or looking at picture books with their children. Table 3 summarizes a series of bivariate analyses of book sharing and reports significant differences in these distributions across the demographic descriptors included in our analysis. Although there is a significant difference in the distributions of frequency across the 2 age groups, the percentage of DBS reported by parents of children younger than 3 roughly equals that reported by parents of 4 to 5 year olds (66.9% and 67.6%, respectively). There is, however, a 4.4% decrease in parents who report never sharing books with their children in the older age group. As would be predicted by the literature,^{7–9} lower

TABLE 2 Characteristics of Children by Race and Ethnicity

	Non-Hispanic white		Non-Hispanic black		Hispanic		Asian	
	CIF	Native-Born Parents	CIF	Native-Born Parents	CIF	Native-Born Parents	CIF	Native-Born Parents
Total, <i>n</i>	1440	5604	95	400	3660	1571	1518	224
Parental education, %								
Less than high school	3.0	4.7	5.3	6.0	47.7	8.3	5.1	1.3
College educated	55.2	62.8	46.3	33.5	10.5	31.0	70.4	75.9
Household income, %								
Income <200% FPL	17.0	19.1	42.1	42.8	75.7	33.8	24.0	7.6
Income >200% FPL	83.0	80.9	57.9	57.3	24.3	66.3	76.0	92.4
Language spoken in home, %								
English Only	42.2	88.7	46.3	90.0	3.3	50.3	13.5	68.3
English and additional language	42.6	9.9	41.1	8.5	58.4	45.5	57.6	23.2
No English	15.2	1.4	12.6	1.5	38.3	4.2	28.9	8.5
Medical care, %								
Usual source of medical care	98.0	98.9	97.9	98.0	97.2	98.1	93.6	99.6
Public health insurance	18.6	15.7	37.9	43.0	65.6	30.1	23.5	8.0

parental education and household income are associated with decreased frequency of book sharing; only 45.7% of parents with less than a high school education and 44.4% of low-income parents report DBS. Also consistent

with previous analyses,⁷⁻⁹ parents of Hispanic (53.4%), Asian (65.2%), and non-Hispanic black (64.6%) children are less likely than their white peers (78.0%) to share books with children daily. Similarly, 70% of parents in

English-speaking homes report DBS, whereas only half of children in non-English speaking homes report doing so. Notably, parents who report a usual source of medical care also report higher rates of DBS than those

TABLE 3 Bivariate Analyses of Book Sharing Frequency (*N* = 14 512)

	Total	Every Day, %	3-6 Days/Week, %	1-2 Days/Week, %	Never, %	<i>P</i>
Overall	14 512	67.1	21.8	7.2	3.9	—
Age						
0-3 y	9570	66.9	19.9	7.8	5.4	—
4-5 y	4942	67.6	25.4	6.0	1.0	<.001
Parental education						
College educated	6282	77.6	16.2	3.7	2.5	—
High school equivalent	4719	63.0	24.8	8.1	4.1	<.001
Less than high school	2204	45.7	30.5	15.7	8.1	<.001
Household income						
<200% FPL	5118	44.4	27.6	11.7	6.46	—
>200% FPL	9394	74.2	18.7	4.67	2.51	<.001
Race/ethnicity						
Non-Hispanic white, overall	7044	78.0	16.7	3.1	2.2	—
Non-Hispanic black, overall	495	64.6	26.7	5.9	3.0	<.001
Hispanic, overall	5231	53.4	28.9	12.3	5.4	<.001
Asian, overall	1742	65.2	19.7	8.4	6.6	<.001
CIF						
Native-born parents	7648	75.8	18.7	3.37	2.14	—
One foreign-born parent	2418	67.9	21.4	7.40	3.27	<.001
Two foreign-born parents	4446	51.8	27.3	13.5	7.30	<.001
CIF, by ethnicity						
Hispanic, native-born parents	1571	68.0	23.7	5.9	2.5	—
Hispanic CIF	3660	47.1	31.1	15.0	6.7	<.001
Asian, native-born parents	224	78.6	14.7	3.6	3.1	—
Asian CIF	1518	63.2	20.5	9.2	7.1	<.001
Language in home						
Any English	12 269	70.2	21.1	5.8	2.9	—
No English	2243	49.9	25.9	14.9	9.3	<.001
Medical care						
Usual source of medical care	14 226	67.3	21.8	7.1	3.8	—
No usual source of medical care	286	56.6	23.1	11.2	9.1	<.001

who do not have regular access (67.3% and 56.6%, respectively).

Overall, parents in immigrant families are less likely to share books with children daily (57.5%) than native-born parents (78.6%). This disparity is replicated within racial and ethnic groups, with a lower percentage of Asian and Hispanic parents in immigrant households reporting DBS (63.2% and 47.1%, respectively) than native-born parents (78.6% and 68.0%, respectively). Correspondingly, the percentage of Asian and Hispanic parents in immigrant households who report never sharing books with their children (7.1% and 6.7%, respectively) is higher than that of their native-born counterparts (3.1% and 2.5%, respectively).

Table 4 shows the results of the weighted multivariate logistic regression in which all predictors with significant bivariate associations were regressed on the outcome of DBS. CIF status is associated with a decreased likelihood of DBS, and the strength of this effect varies by whether children have 1 or 2 foreign-born parents. In the overall sample, those children with 1 foreign-born parent are 16% less likely to reside in a household reporting DBS than their peers with native-born parents (odds ratio [OR]: 0.84; 95% confidence interval [CI]: 0.76–0.94). An even stronger effect is seen in households with 2 foreign-born parents because these children are 39% less likely to share books with parents daily (OR: 0.61; 95% CI: 0.55–0.68). Consistent

with previous findings,^{7–9} a positive association was found between parental education and the likelihood of sharing books with children daily. Similarly, increasing household income is associated with greater odds of DBS in the home; however, having a usual source of medical care is not. All racial and ethnic minorities are less likely to read or share picture books with their children than their non-Hispanic white counterparts. Parents heading households in which English is spoken are 18% more likely to report DBS (OR: 1.18; 95% CI: 1.13–1.61).

Table 5 summarizes the varying strength of modeled predictors across each racial and ethnic group. CIF status is an independent predictor of the likelihood of DBS for Hispanic, Asian, and white children. As in the overall model, the odds of DBS are most significantly decreased for CIF with 2 foreign-born parents. Asian CIF (OR: 0.56; 95% CI: 0.38–0.81) and white CIF (OR: 0.64; 95% CI: 0.51–0.82) with 2 foreign-born parents are significantly less likely to share books with parents daily than their peers of the same race/ethnicity with native-born parents. This effect is most pronounced for Hispanic children, with those having 1 foreign-born parent 34% less likely (OR: 0.66; 95% CI: 0.56–0.78) and those with 2 foreign-born parents 51% less likely (OR: 0.49; 95% CI: 0.42–0.58) to report DBS than their peers with native-born parents. Language spoken at home varied in strength as a predictor across racial and ethnic

groups, with English-proficiency most greatly increasing the odds of book sharing for Asian children (OR: 1.33; 95% CI: 1.14–1.80). Although parental language, income, and education had a variable effect for each racial and ethnic group, Hispanics were the only group for which all modeled variables had a significant association with the likelihood of DBS in the home.

DISCUSSION

Through analysis of 14 512 children sampled by the CHIS from 2005 to 2009, this study finds that status as a child in an immigrant family is an independent predictor of decreased exposure to book sharing in early childhood. Parents in immigrant households report lower frequencies of DBS and higher frequencies of never sharing books with their children, as compared with their native-born counterparts. The strength of this effect is most pronounced for children with 2 foreign-born parents. Hispanic children, followed by Asian children, are most strongly affected by CIF status as a predictor of their exposure to DBS. Those Hispanic and Asian households with 2 foreign-born parents have both the lowest frequencies and likelihood of DBS, as reported by parents.

The implications of decreased exposure to practices that promote early literacy and language development in the homes of immigrant children are substantial. Immigrants and their children will account for 85% of workforce growth over the next 2 decades, during which time the aging of the population will require unprecedented expenditures for the health and retirement benefits of seniors.^{25,26} Such demographic shifts offer compelling grounds to address the many factors driving the lower occupational attainment of CIF, such as the low rates of high school completion by Hispanic CIF.²⁷ These disparities in high school completion and the pursuit of higher education are

TABLE 4 Multivariate Logistic Regression of Predictors of Book Sharing, Overall (*N* = 14 512)

Predictor	OR	95% CI	<i>P</i>
CIF, one foreign-born parent	0.84	0.76–0.94	.002
CIF, two foreign-born parents	0.61	0.54–0.68	<.001
Non-Hispanic black	0.56	0.46–0.69	<.001
Hispanic	0.54	0.45–0.59	<.001
Asian	0.76	0.67–0.88	<.001
English spoken in home	1.18	1.06–1.32	.002
Adult respondent: less than high school	0.75	0.67–0.84	<.001
Household income: <200% FPL	0.72	0.66–0.78	<.001
Female child	1.25	1.16–1.35	<.001

TABLE 5 Multivariate Logistic Regression of Predictors of Book Sharing (by Race and Ethnicity)

Predictor	Non-Hispanic White Children (OR), N = 7044	African American Children, N = 495	Hispanic Children, N = 5231	Asian Children, N = 1742
CIF, one foreign-born parent	0.96	1.53	0.66 ^b	0.72
CIF, two foreign-born parents	0.64 ^b	0.92	0.49 ^b	0.56 ^a
English spoken in home	—	—	1.22 ^a	1.33 ^a
Household income: <200% FPL	0.72 ^b	—	0.77 ^b	0.59 ^b
Adult respondent: less than high school	0.65 ^a	—	0.81 ^a	—
Three-years or younger	1.18 ^a	—	0.81 ^b	—

^a Significant at $P \leq .05$.

^b Significant at $P \leq .001$.

predicted by differences in academic achievement that are measured as early as the third grade, which are themselves predicted by differences in school-readiness at the time of entry into kindergarten.^{28,29} Accordingly, household practices related to the early literacy and language development of children, such as book sharing, may be critical in narrowing disparities in the academic and subsequent economic attainment of CIF.

As the period of early childhood becomes increasingly established as a driver of school-readiness and subsequent adult outcomes,^{30–32} the well-child visit may present a unique opportunity to shape beliefs and practices related to emergent literacy in the immigrant household.³³ Although having a usual source of health care was not significant in this study, the health care setting is the only social institution to have routine contact with children during their first 3 to 5 years of life; disparities in household practices shaping children's literacy and language development should be meaningfully addressed by pediatricians. Interventions such as ROR, can be a means of promoting early literacy and language development through the primary care setting,^{34,35} yet little is known about how the impact of such programming may vary across immigrant and native-born families. Though it has been demonstrated that immigrant families are more likely to read to children in response to the provision of books dur-

ing the well-child visit,¹⁵ there remains much to understand regarding practices shaping early literacy and language development in immigrant households. Potential contributors to the decreased likelihood of book sharing in immigrant households may be that these families receive their care at sites that either do not participate or are not adequately resourced to embrace all parameters of ROR. As the Affordable Care Act impacts health care access for all populations of children, health care systems should be monitored for their capacity to engage families with programming that supports emergent literacy.

This study has several limitations. First, the ways in which parents interpret the question of sharing books with their children may vary. For example, non-English speaking parents may interpret this question to be asking whether they read with children in English. Second, consistent with the California state demographics, the vast majority of Hispanic children surveyed were of Mexican origin. With ~80% of Hispanic children identified as Mexican in the combined CHIS sample, these findings may be less generalizable to other Hispanic subgroups. Third, although our regression models focused upon parental report of daily reading to draw attention to pronounced disparities, there is no evidence to support a significant difference in the cognitive

benefits of reading to children every-day as opposed to 3 to 6 days per week. Finally, no causal inferences can be drawn from these associations. Instead, this research has intended to highlight disparities in the early literacy-related practices of immigrant families, even when accounting for differences in socioeconomic status, parental education, and language spoken in the home. More research is needed to gain mechanistic insights as to the decreased odds of book sharing in immigrant homes, and the developmental and educational consequences of this disparity. California is undergoing an accelerated demographic transformation as compared with the remainder of the United States, such that the CHIS serves as a useful predictor of trends that will soon emerge nationally. As CIF come to comprise the majority of children in schools, and employees in the workforce, it is of importance that we appreciate the ways in which the period of early childhood can provide a platform for these immigrant youth to overcome their relative disadvantage, and begin their schooling equipped with competencies that will allow them to achieve their potential.

ACKNOWLEDGMENTS

The authors would like to acknowledge Isabella Chu, MPH, and the Center of Excellence in Diversity for Medical Education for their contributions to this project.

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Pediatrics; originally published online June 2, 2014;

DOI: 10.1542/peds.2013-3710

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