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# Parental Reading and Singing to California's Young Children – Trends, Predictors, and Association with the *Talk. Read. Sing.®* Campaign

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Talking, reading, and singing to children are critical to ensuring their development of literacy and language skills. Current research supports the benefits of reading to young children[1,2] and the benefits of talking, reading, and singing as a way of using language in the child's developmental environment.[3] Reading aloud to children when they are 5 or younger is associated with enhanced social-emotional development, as observed in improved behaviors and attention[4] and in positive developmental outcomes.[5–7] Being read to early in life is associated with improved language ability, according to a meta-analysis of the impact of age of onset and frequency of reading on infants' and toddlers' early language and literacy development.[8] Furthermore, improved language ability at age 2 predicts future language ability, as measured in a longitudinal study with, on average, five years of follow-up.[9] However, a study using data from the California Health Interview Survey 2005-2009 found that foreign-born parents were less likely than U.S.-born parents to read to their children.[10]

Since 2014, First 5 California has funded *Talk.Read.Sing.®*, a social marketing campaign that educates parents of children 0-5 years old about the benefits of talking, reading, and singing every day to their children. The campaign encourages parents to interact with their young children to promote brain development as well as emotional and social growth. An evaluation of the campaign found high recall of the *Talk.Read.Sing.* social marketing messages among parents. Furthermore, recall and recognition of the messages were associated with an increased likelihood that parents would talk, read, and sing with their children from birth to age 5.[11]

The purpose of this policy brief is to use data from the California Health Interview Survey, a population-based representative survey, to do the following:

1) describe trends in parents' reading and singing to their children from birth to 5 years of age

2) identify characteristics associated with reading and singing to children from birth to 5 years of age

3) assess the reach of the *Talk.Read.Sing.* campaign, as well as the relationship between campaign awareness and reading and singing to children from birth to 5 years of age.

## Reading and Singing to Children Increased

From 2005 to 2016, the number of parents reading (defined as reading or looking at picture books) to their young children three or more days per week increased significantly, but trends in reading every day did not

**Exhibit 1**

**Trends in Reading to Children Ages 5 and Younger, California Health Interview Survey 2005-2016**
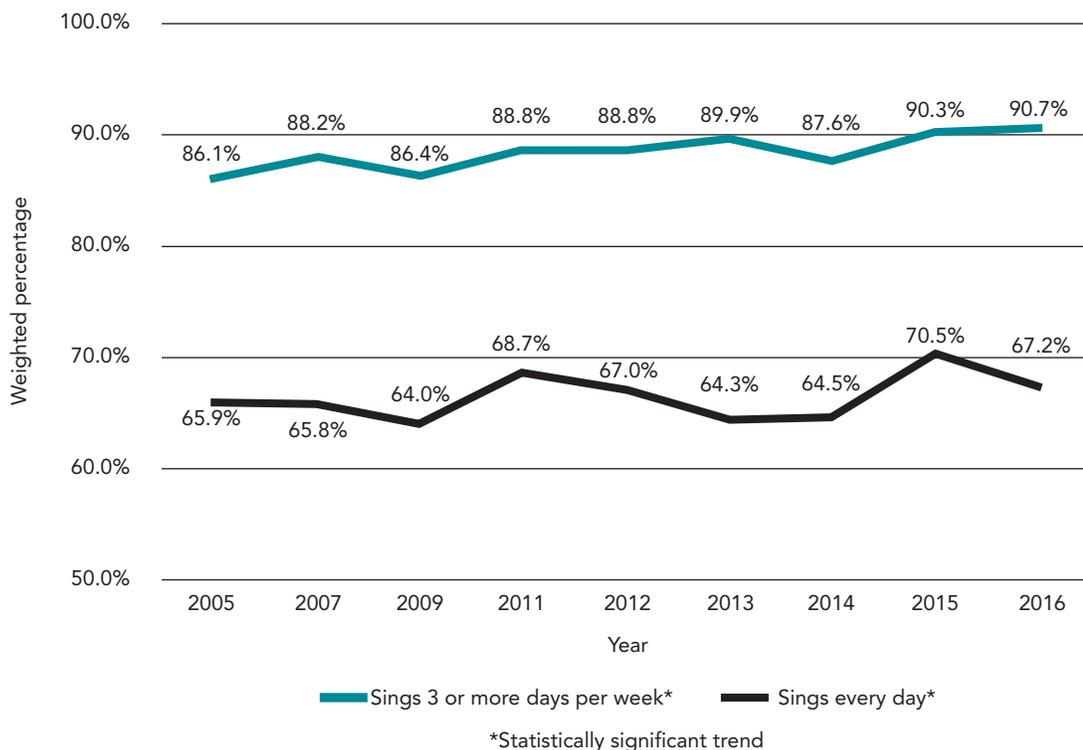


*Statistically significant trend
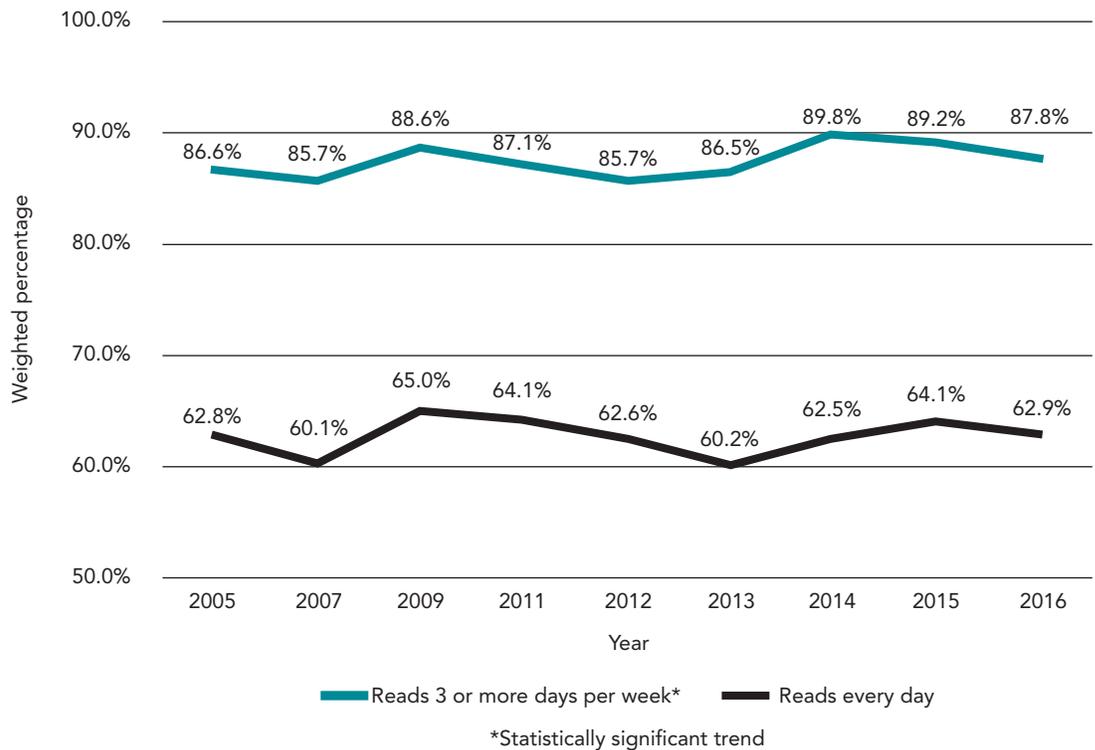
increase significantly (Exhibit 1). On average, 62.3% of parents read every day to their children ages 0 to 5 years. The prevalence from 2005-2016 ranges from a low of 60.1% in 2007 to a high of 65.0% in 2009, and there is not a statistically significant trend over time. Trends in reading three or more days per week were similar, although more parents read three or more days per week to their children ages 0 to 5: The prevalence from 2005-2016 ranges from a low of 85.7% in 2007 to a high of 89.8% in 2014, an increase that is statistically significant (p-value < 0.01).

From 2005 to 2016, parents singing (defined as singing or playing music) to their young children three or more days per week and

singing every day both increased significantly (Exhibit 2). On average, 66.4% of parents reported singing every day to their child ages 0 to 5 years. The prevalence from 2005-2016 ranged from a low of 64.0% in 2009 to a high of 70.5% in 2015, an increase that is statistically significant (p-value < 0.01). Trends in singing three or more days per week were similar. Compared to singing every day, more parents sang three or more days per week to their child ages 0 to 5 years. The prevalence from 2005-2016 ranges from a low of 86.1% in 2005 to a high of 90.7% in 2016, an increase that is statistically significant (p-value < 0.01).

**Trends in Singing to Children Ages 5 and Younger, California Health Interview Survey 2005-2016**

Exhibit 2



Sings 3 or more days per week* — 86.1%, 88.2%, 86.4%, 88.8%, 88.8%, 89.9%, 87.6%, 90.3%, 90.7%

Sings every day* — 65.9%, 65.8%, 64.0%, 68.7%, 67.0%, 64.3%, 64.5%, 70.5%, 67.2%

Years: 2005, 2007, 2009, 2011, 2012, 2013, 2014, 2015, 2016

*Statistically significant trend

## Predictors of Reading and Singing to Children from Birth to 5 Years of Age

We examined the relationship between both reading and singing to children from birth to 5 years of age and the demographic and socioeconomic characteristics of the parent, child, family, and household using logistic regression analysis of the 2015-2016 California Health Interview Survey data. The sample was restricted to 2,168 children from birth to 5 years old. The following characteristics were explored as possible predictors of parental reading and singing: gender, age, race/ethnicity, parents' marital status, parents' foreign-born status, parental education and employment status, child-care arrangements, number of children in the family, language(s) spoken at home, household income as a percent of the federal poverty level (FPL), and region of residence in California.

Only those characteristics that were significant predictors of parental reading and singing were retained in the final model presented in this brief. These included the parents' foreign-born status (Exhibit 3, Model 1), the child's race/ethnicity (Exhibit 3, Model 1), language(s) spoken at home (Exhibit 3, Model 2), and the parents' education (Exhibit 3, Model 2).

**Exhibit 3**

**Predictors of Reading and Singing to Children Ages 5 and Younger, California Health Interview Survey 2015-2016**

| | Reads Every Day | | | | Reads 3+ Days/Week | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 1 | | Model 2 | |
| | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI |
| **Parent is foreign-born** | 0.56* | (0.38, 0.83) | 0.87 | (0.52, 1.45) | 0.4* | (0.21, 0.77) | 0.73 | (0.32, 1.63) |
| **Race/ethnicity (reference = Non-Latino white)** | | | | | | | | |
| Latino | 0.3* | (0.17, 0.53) | 0.66 | (0.34, 1.31) | 0.33* | (0.15, 0.70) | 1 | (0.42, 2.43) |
| Asian/Pacific Islander | 0.52 | (0.21, 1.30) | 0.36 | (0.12, 1.07) | 0.52 | (0.16, 1.73) | 0.41 | (0.13, 1.36) |
| Other or Multiple Race | 0.4* | (0.20, 0.77) | 0.41* | (0.21, 0.81) | 1.02 | (0.31, 3.42) | 1.1 | (0.34, 3.56) |
| **Languages spoken at home (reference = English only)** | | | | | | | | |
| Spanish | | | 0.24* | (0.09, 0.64) | | | 0.2* | (0.05, 0.79) |
| Another non-English | | | 0.59 | (0.23, 1.51) | | | 0.28 | (0.07, 1.12) |
| English and Spanish | | | 0.43* | (0.21, 0.87) | | | 0.31* | (0.10, 0.96) |
| English and Another | | | 1.1 | (0.42, 1.89) | | | 0.51 | (0.13, 2.04) |
| **Parent has college degree** | | | 1.58 | (0.94, 2.67) | | | 3.05* | (1.25, 7.44) |
| | Sings Every Day | | | | Sings 3+ Days/Week | | | |
| | Model 1 | | Model 2 | | Model 1 | | Model 2 | |
| | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI |
| **Parent is foreign-born** | 0.39* | (0.26, 0.58) | 0.58 | (0.34, 1.00) | 0.18* | (0.09, 0.38) | 0.26* | (0.10, 0.66) |
| **Race/ethnicity (reference = Non-Latino white)** | | | | | | | | |
| Latino | 0.76 | (0.41, 1.43) | 1.08 | (0.55, 2.13) | 0.7 | (0.30, 1.68) | 1.06 | (0.33, 3.40) |
| Asian/Pacific Islander | 1.16 | (0.47, 2.90) | 1.03 | (0.35, 3.06) | 1.28 | (0.33, 4.98) | 1.19 | (0.32, 4.49) |
| Other or Multiple Race | 1.52 | (0.57, 4.09) | 1.46 | (0.57, 3.79) | 1.78 | (0.39, 8.17) | 1.69 | (0.39, 7.37) |
| **Language (reference = English only)+** | | | | | | | | |
| Spanish | | | 0.26* | (0.10, 0.63) | | | 0.46 | (0.11, 2.01) |
| Another non-English | | | 0.78 | (0.25, 2.40) | | | 0.38 | (0.07, 2.15) |
| English and Spanish | | | 0.58 | (0.27, 1.23) | | | 0.92 | (0.24, 3.51) |
| English and Another | | | 0.76 | (0.22, 2.64) | | | 0.77 | (0.18, 3.32) |
| **Parent has college degree** | | | 0.82 | (0.46, 1.48) | | | 1.98 | (0.60, 6.51) |

☐ Decreased likelihood     ☐ Increased likelihood

Abbreviations: AOR Adjusted Odds Ratio, CI Confidence Interval.

*p-value<0.05

Note:
Results are reported as adjusted odds ratios. Reference groups for race/ethnicity and language spoken at home are indicated in the table. Reference groups for foreign-born and college degree are U.S.-born and less than a college degree, respectively. A value below 1.0 indicates that the group is less likely to read or sing than the reference group. A value above 1.0 indicates that the group is more likely to read or sing to their child than the parents in the reference group. In Model 1, the odds are simultaneously adjusted for foreign-born status and race/ethnicity. In Model 2, the odds are simultaneously adjusted for foreign-born status, race/ethnicity, language spoken at home, and parents' education.

**Reading and *Talk. Read. Sing.* Campaign Awareness, California Health Interview Survey 2015-2016**     **Exhibit 4**
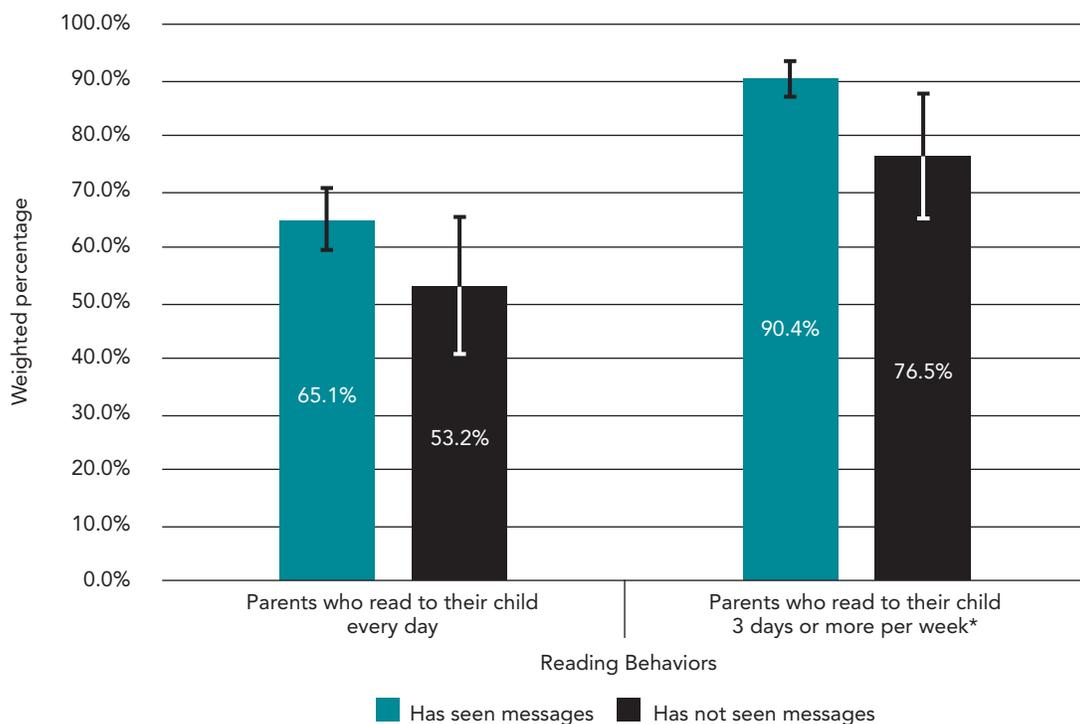


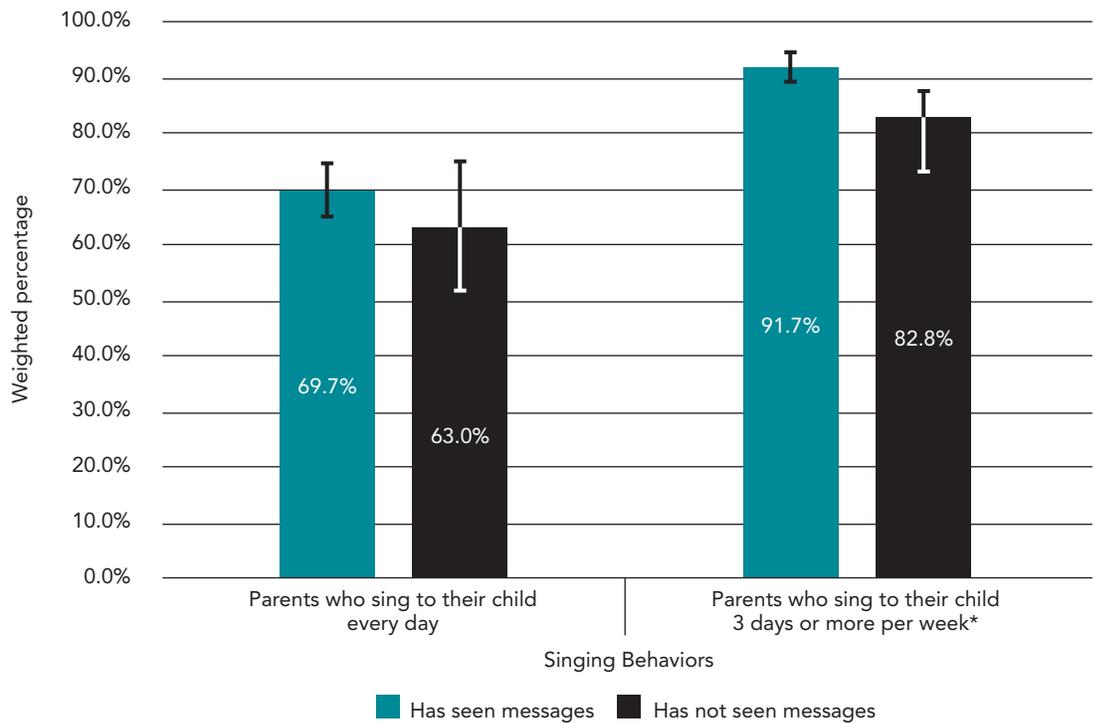*Statistically significant in unadjusted logistic regression model

Consistent with previous findings from the 2005-2009 CHIS data,[10] foreign-born parents were less likely to read every day to their children from birth to 5 years of age compared to U.S.-born parents. White parents were more likely than Latino parents to read every day to their children from birth to 5 years old, and this difference was statistically significant.

Parents in families that spoke Spanish at home were significantly less likely to read to their children from birth to 5 years old than parents in families that spoke only English at home (Exhibit 3, Model 2). This was true both for families who spoke only Spanish and families that spoke both English and Spanish. Taking these language differences into account explained most of the difference in reading to children between foreign-born and U.S.-born parents, and about half of the difference between Latino and white families. Although parents with a college degree were

significantly more likely to read three or more days per week to their children from birth to 5 years old, controlling for this difference did not further explain the relationship between reading and race/ethnicity or parents' birthplace.

Foreign-born parents were significantly less likely than U.S.-born parents to sing to their children from birth to 5 years old. Race/ethnicity, language spoken at home, and parents' education were added to the regression models to determine whether these factors explained the differences by birthplace. Families who spoke only Spanish at home were significantly less likely to sing every day to their children from birth to 5 years old, but this explained less than half of the difference between foreign-born and U.S.-born parents. Race/ethnicity and parents' education were not related to singing to children from birth to 5 years old.

**Exhibit 5**

**Singing and *Talk. Read. Sing.* Campaign Awareness, California Health Interview Survey 2005-2016**



Has seen messages    Has not seen messages

*Statistically significant in adjusted logistic regression model

### *Talk.Read.Sing.* Campaign Awareness Among Parents of Children from Birth to 5 Years Old

Eighty-seven percent of parents had seen *Talk.Read.Sing.* campaign messages. Among parents who had seen the campaign messages, 65.1% read to their young child every day (Exhibit 4), and 69.7% sang to their child every day (Exhibit 5). Among parents who had not seen the campaign messages, 53.2% read to their young children every day, and 63.0% sang to them every day. Similar patterns were observed when analyzing parents who read or sang three or more days per week to their child, although the absolute numbers were higher. Logistic regression analyses showed that while the absolute values for reading and singing were higher among parents who had seen the campaign messages compared to those who had not, these differences were only statistically significant for reading or singing three or more days per week.

### Discussion

More than three-quarters of California parents of children ages 0 to 5 years currently read and sing to their children three days a week or more. Furthermore, most parents of children from birth to 5 years old in California recall messages of the *Talk.Read.Sing.* social marketing campaign. However, parents who are foreign-born or who speak Spanish at home are less likely to read or sing to their young children than both their U.S.-born counterparts and those who do not speak Spanish at home (Exhibit 3). Therefore, widening the reach of the *Talk.Read.Sing.* message remains important, particularly for targeting parents who speak Spanish at home and parents who are immigrants. Analysis of CHIS data in this brief shows that parents who were familiar with the *Talk.Read.Sing.* campaign were more likely to read or sing to their children three days or more per week (Exhibits 4 and 5). Addressing the development of dual language learners, now a majority of California's young children,

is a key priority for promoting educational success.[12,13] Therefore, further promotion of talking, reading, and singing to young children in households that have dual language learners, such as households with parents who are foreign-born or who speak only Spanish at home, will be critical for ensuring the children's future educational success.

## Data Source and Methods

This research brief presents results from interviews with parents and guardians about their children during the 2005-2016 waves of the California Health Interview Survey (CHIS). From 2011-2016, CHIS was a telephone survey conducted continuously throughout the year. From 2005-2011, CHIS was a telephone survey conducted during odd years (2005, 2007, 2009). Each annual data set is based on interviews with respondents in more than 20,000 California households and covers a diverse array of health-related topics, including health insurance coverage, health status and behaviors, and access to health care. For more information regarding CHIS, please visit the CHIS website at *www.chis.ucla.edu*.

The analysis used three outcome measures: (1) how often a parent reads to the child (CG14), as defined by the question and response categories: In a usual week, about how many days do you or any other family members read stories or look at picture books with the selected child ages 0-5? Every day, 3-6 days, 1-2 days, Never; (2) how often a parent sings to the child (CG15), as defined by the question and response categories: In a usual week, about how many days do you or any other family members play music or sing songs with the selected child ages 0-5? Every day, 3-6 days, 1-2 days, Never; and (3) whether the parent is familiar with the *Talk.Read.Sing.* campaign. For analysis, each measure was recoded into two binary outcomes: (1) every day compared to less often, and (2) 3-6 days compared to less often.

Analyses were restricted to children 0 to 5 years old. Trends over time were assessed using population-weighted cross-tabulations between the outcome and year of interview, calculated to preserve the corrected standard errors using PROC SURVEYFREQ and replicate weights in SAS. To determine whether trends were statistically significant, PROC SURVEYLOGISTIC was used to fit logistic regression models with the year as the predictor; these models were fit using replicate weights in SAS. To determine predictors of reading and singing, multivariate logistic regression models were used predicting each of the two outcomes,

estimated using PROC SURVEYLOGISTIC and the replicate weights to preserve the corrected standard errors. The final analysis added the measures of exposure to the *Talk.Read.Sing.* campaign to these logistic regression models to examine whether campaign awareness was associated with reading or singing. Any results with a p-value less than 0.05 were considered statistically significant.

Because questions about reading and singing (CG14 and CG15) were restricted to those with children ages 3 and under in 2003, the trend analyses were conducted using survey years 2005 through 2016. A policy brief published in 2015 found a statistically significant increase in both reading (defined as reading or looking at picture books) and singing (defined as singing or playing music) from 2003 compared to 2011-2012 CHIS.[14]

For the analyses reported in this brief, race/ethnicity was measured as the race/ethnicity of the child, because racial/ethnic information was not available for all parents. Race/ethnicity is coded based on the Office of Management and Budget's classification in which all Latinos are classified together, regardless of race, while other racial categories are non-Latino. Due to the small number of children who are non-Latino Native Hawaiian and Pacific Islanders, non-Latino African American, non-Latino other race, and non-Latino multiracial, non-Latino Native Hawaiian Pacific Islanders were combined with Asian children, while the others were combined to form a single "Non-Latino Other" category.

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## Endnotes

1    Flack ZM, Field AP, Horst JS. 2018. The Effects of Shared Storybook Reading on Word Learning: A Meta-Analysis. *Developmental Psychology* 54(7):1334-1346. *https://dx.doi.org/10.1037/dev0000512*

2    Xie Q-W, Chan CHY, Ji Q, Chan CLW. 2018. Psychosocial Effects of Parent-Child Book Reading Interventions: A Meta-Analysis. *Pediatrics* 141(4). *https://dx.doi.org/10.1542/peds.2017-2675*

3    Hirsh-Pasek K, Golinkoff RM. 2018. "Languagizing" Their World: Why Talking, Reading, and Singing Are So Important. *Zero to Three* 38:12-18.

4    Mendelsohn AL, Cates CB, Weisleder A, et al. 2018. Reading Aloud, Play, and Social-Emotional Development. *Pediatrics* 141(5). *https://dx.doi.org/10.1542/peds.2017-3393*

5    Bus AG, van IJzendoorn MH, Pellegrini AD. 1995. Joint Book Reading Makes for Success in Learning to Read: A Meta-Analysis on Intergenerational Transmission of Literacy. *Review of Educational Research* 65(1):1-21. *https://dx.doi.org/10.3102/00346543065001001*

6    Fletcher KL, Reese E. 2005. Picture Book Reading With Young Children: A Conceptual Framework. *Developmental Review* 25(1):64-103. *https://dx.doi.org/10.1016/j.dr.2004.08.009*

7    Mol SE, Bus AG. 2011. To Read or Not to Read: A Meta-Analysis of Print Exposure From Infancy to Early Adulthood. *Psychological Bulletin* 137(2):267-296. *https://dx.doi.org/10.1037/a0021890*

8    Dunst C, Simkus A, Hamby D. 2012. *Children's Story Retelling as a Literacy and Language Enhancement Strategy*. Center for Early Literacy Learning.

9    Duff FJ, Reen G, Plunkett K, Nation K. 2015. Do Infant Vocabulary Skills Predict School-Age Language and Literacy Outcomes? *Journal of Child Psychology and Psychiatry* 56(8):848-856. *https://dx.doi.org/10.1111/jcpp.12378*

10   Festa N, Loftus PD, Cullen MR, Mendoza FS. 2014. Disparities in Early Exposure to Book Sharing Within Immigrant Families. *Pediatrics* 134(1):e162-168. *https://dx.doi.org/10.1542/peds.2013-3710*

11   Nye L, Ghirardelli A. 2015. *Final Report: First 5 California* Talk.Read.Sing.*Campaign Evaluation*. Chicago, IL: NORC.

12   Holtby S, Lordi N, Park R, Ponce N. 2017. *Families With Young Children in California: Findings From the California Health Interview Survey, 2011-2014, by Geography and Home Language*. Los Angeles, CA: UCLA Center for Health Policy Research. *http://healthpolicy.ucla.edu/publications/Documents/PDF/2017/Child_PB_FINAL_5-31-17.pdf*

13   National Academies of Sciences, Engineering, and Medicine. 2017. *Promoting the Educational Success of Children and Youth Learning English: Promising Futures*. Washington, D.C.: The National Academies Press. *https://doi.org/10.17226/24677*

14   Holtby S, Zahnd E, Grant D. 2015. *Ten-Year Trends in the Health of Young Children in California: 2003 to 2011-2012*. Los Angeles, CA: UCLA Center for Health Policy Research. *http://healthpolicy.ucla.edu/publications/Documents/PDF/2015/Child_Health_Trends_FINAL.pdf*