

**Authors**

Pamela Jakiela  
Williams College

Owen Ozier  
Williams College



**Enhancing young children's language acquisition through parent-child book-sharing: A randomized trial in rural Kenya**

Heather A. Knauer<sup>1,2</sup>, Pamela Jakiela<sup>3</sup>, Owen Ozier<sup>1,2</sup>, Frances Aboud<sup>4</sup>, Lia C.H. Fernald<sup>5</sup>

<sup>1</sup>University of California, Schiefelbusch Public Health, Berkeley, United States

<sup>2</sup>Center for Global Development, United States

<sup>3</sup>The World Bank, Development Research Group, United States

<sup>4</sup>McGill University, Department of Psychology, Canada

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**ABSTRACT**

Worldwide, 250 million children under five (43%) are not meeting their developmental potential because they lack adequate nutrition and cognitive stimulation in early childhood. Several parent support programs have shown significant benefits for children's development, but the programs are often expensive and resource intensive. The objective of this study was to test several variants of a potentially scalable, cost-effective intervention to increase cognitive stimulation by parents and improve emergent literacy skills in children. The intervention was a modified dialogic reading training program that used culturally and linguistically appropriate books adapted for a low-literacy population. We used a cluster randomized controlled trial with four intervention arms and one control arm in a sample of caregivers ( $n = 217$ ) and their 24- to 48-month-old children ( $n = 133$ ) in rural Kenya. The first treatment group received storybooks, while the other treatment arms received storybooks paired with varying quantities of modified dialogic reading training for parents. Main effects of each arm of the trial were examined, and tests of heterogeneity were conducted to examine differences in effects among children of different sex, literacy caregivers, fathers if assigned with the provision of culturally appropriate children's books, increased reading frequency and amount of the quality of caregiver-child reading interactions among preschool-aged children. Treatments involving training improved storybook-specific emergent vocabulary. The children of literacy caregivers benefited at least as much as the children of illiterate caregivers. For some outcomes, effects were comparable; for other outcomes, there were differentially larger effects for children of illiterate caregivers.

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**1. Introduction**

Poverty has significant and lasting consequences for children's cognitive and language development (Duncan & Corcoran, 2002; Duncan, Coatsworth, & Plomin, 1997). In low- and middle-income countries (LMICs), 43% of children under age five do not reach their developmental potential (Black et al., 2017). Even in Kenya, one of the best-educated countries in Sub-Saharan Africa, only 30% of third graders can read at the second-grade level (Fryer, 2017), and 34% of pre-school children are "on track" for language and cognitive development (Kenya National Bureau of Statistics, 2017). The lack of adequate literacy preparation is a key risk factor for poor performance in primary school worldwide (Bhutta et al., 2008).

Over one billion children living in poverty do not achieve their potential in terms of language development and emergent literacy in that they do not have access to linguistically stimulating home environments (Lynch & Cicchetti, 2013). The availability of storybooks in the home and the quantity and quality of parents' reading engagements with their children are consistently associated with children's cognitive and language development, school readiness, and achievement (Walker et al., 2009; Fuchs, 2008; Rodriguez et al., 2009; Zacher, Todd, Mackenry, & Siegel-Wilson, 2010). In particular, exposure to storybooks has a direct, positive, causal impact on children's vocabulary and language skills (Dreyfus & Sénéchal, 2005).

In spite of the importance of books and parental engagement, 97% of households in Sub-Saharan Africa have two or fewer children's books, and only half of parents report having engaged in any cognitively stimulating activities with their young children in the last three days (Index of Nations Children's Fund, 2017). In some African contexts, caregiver conversations between parents and their young children are actively discouraged by cultural norms

\* Corresponding author at: 1018 W Street NW, Mail Stop MN 003-311, Washington, DC 20037, United States.

E-mail address: [pjakiela@williams.edu](mailto:pjakiela@williams.edu) (P. Jakiela).

<sup>5</sup> Present address: University of Michigan, School of Social Work, United States.

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# Enhancing young children's language acquisition through parent-child book-sharing: A randomized trial in rural Kenya

Worldwide, 250 million children under five (43%) are not meeting their developmental potential because they lack adequate nutrition and cognitive stimulation in early childhood. Several parent support programs have shown significant benefits for children's development, but the programs are often expensive and resource intensive. The objective of this study was to test several variants of a potentially scalable, cost-effective intervention to increase

cognitive stimulation by parents and improve emergent literacy skills in children. The intervention was a modified dialogic reading training program that used culturally and linguistically appropriate books adapted for a low-literacy population. We used a cluster randomized controlled trial with four intervention arms and one control arm in a sample of caregivers ( $n=357$ ) and their 24- to 83-month-old children ( $n=510$ ) in rural Kenya. The first treatment group received storybooks, while the other treatment arms received storybooks paired with varying quantities of modified dialogic reading training for parents. Main effects of each arm of the trial were examined, and tests of heterogeneity were conducted to examine differential effects among children of illiterate vs. literate caregivers. Parent training paired with the provision of culturally appropriate children's books increased reading frequency and improved the quality of caregiver-child reading interactions among preschool-aged children. Treatments involving training improved storybook-specific expressive vocabulary. The children of illiterate caregivers benefited at least as much as the children of literate caregivers. For some outcomes, effects were comparable; for other outcomes, there were differentially larger effects for children of illiterate caregivers.

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