

Doc Says: Promoting School Readiness Through a Pediatric Clinic-Based Text Messaging Intervention

Janine Bruce, Ren Bruguera, Lisa J. Chamberlain, Elizabeth Connelly, Monica De La Cruz, Justin B. Doromal, Jennifer Foreman, Rebecca M. Gardner, Steve Harris, Zihuai He, Lynne Huffman, Susanna Loeb, Yesenia Ordaz, Jazmin Perez, Jaime W. Peterson, & Jecca R. Steinberg

OVERVIEW

Pediatric clinics are high-potential providers of school readiness guidance for underserved families with limited access to early childhood education (ECE). This brief summarizes findings from two recently published studies: a randomized controlled trial of a pediatric, clinic-based text messaging intervention for 3- and 4-year-old children from families with low incomes; and a qualitative exploration of parents' expectations for the intervention, parenting practices, and connection with their pediatrician. We find that the messages were effective in boosting children's literacy learning. The intervention received wide support from parents, who particularly liked that the intervention was coming from a trusted source, their pediatrician. The findings together suggest clinic-based parenting supports could improve school readiness for underserved children who are otherwise difficult to reach.

BACKGROUND

Early-life educational experiences can support children's school readiness and prepare them to succeed in kindergarten, yet not all children have equitable access to ECE experiences. The context of poverty, in particular, can impede a child's development in many ways. Households

KEY FINDINGS

- Children receiving the low-cost parenting intervention made significant gains on literacy outcomes, as compared to children not in the intervention. These gains translated to about 3 months of additional literacy learning over the 7-month program.
- First-born children, 2-parent families, English-speaking parents, and children aged ≥ 48 months were especially likely to benefit from the intervention.
- Focus groups revealed that the texts helped parents grow in their role as a teacher at home, increased their child's skills and confidence in learning, fostered connections within the family and in the community, and strengthened their relationship with their pediatrician.

with low incomes may be more likely to have fewer books in the home, have lower maternal education levels, be a single-parent household, have limited access to open seats at an ECE program, and face time constraints and financial and informational barriers. An important question is how to reach children who stand to benefit the most from ECE experiences.

The Tips-by-Text program (TbT) was designed to address some of the barriers families may face in supporting school readiness at home, such as lack of information about effective practices or lack of time to choose which practices to implement. TbT gives parents small yet concrete suggestions for how to support their child's learning and integrate learning opportunities into existing family routines, without demanding too much of their time or attention.

In past research, TbT had been tested in preschool settings. However, many children from the most disconnected families do not have access to preschool.

The health sector can reach these families. Nationally, children from families who live in poverty receive medical care from a network of public pediatric clinics, where they are seen at minimum 14 times between birth and 5 years of age for check-ups and immunizations. As a result, pediatricians have unique, near-universal, regular access to children under 5 years of age. Moreover, families typically report that, outside their own immediate family, their pediatrician is the most trusted voice. Most pediatric clinics now use electronic health records, which offer a scalable way for texting interventions like TbT to reach large patient populations. Finally, partnering with pediatric clinics to implement texting interventions like TbT is aligned with recently issued guidance from the American Academy of Pediatrics, which asks pediatricians to use evidence-based interventions and programs to promote school readiness. In this set of studies, we tested the hypothesis that pediatric clinics can use TbT to improve literacy for young children who were not enrolled in ECE.

THE PROGRAM

Parents received texts 3 times per week over a 7-month period. Each message highlighted an academic skill or set of skills: a "FACT" text, designed to inform and motivate parents; a "TIP" text, to minimize the cognitive, emotional, and time burdens of high-quality parenting by offering specific activities that build on existing family routines; and a "GROWTH" text to provide encouragement and reinforcement.

Similar to the original TbT program, messages were structured to build on one another and were delivered in small bits to ensure a light cognitive load for parents. The texts could be delivered in either English or Spanish. In this version of the intervention, messages began with "DOC SAYS" to convey the pediatrician's support (see Box for sample text messages).

THE EFFECTIVENESS STUDY

We conducted a randomized controlled trial to assess whether children of parents receiving the TbT messages had improved early literacy and parent-child language exchanges, as compared to parents that did not receive any messages. Children in the study were 3 or 4 years old. Children enrolled in ECE (preschool or transitional kindergarten) were not included in the study.

We drew from two large, county-based pediatric clinics in Northern California. Children were screened for eligibility and qualifying families were invited to enroll in the study and complete a demographic questionnaire. Among families included in the study, about three-quarters identified as Hispanic, and about one-half primarily spoke Spanish. The vast majority were families with low incomes, with many reporting household incomes of under \$48,000 and thus eligible for Medi-Cal for Kids in California.

The Phonological Awareness Literacy Screening Tool was used to measure children’s knowledge of literacy fundamentals: name writing, alphabet knowledge, sound awareness, print and word awareness, rhyme awareness, and nursery rhyme awareness. The Parent Child Interactivity Scale, a parent self-assessment that has been validated in similar populations, was used to measure parent-child language exchanges. As presented in “Key Findings,” children receiving the messages saw significant gains in literacy, though we did not detect any differences in parent-child language exchanges between intervention groups.

THE QUALITATIVE STUDY

We conducted focus groups to complement the findings from the randomized controlled trial, and to provide an important perspective on the potential of text messages delivered through pediatric clinics for supporting children’s school readiness. Parents who received text messages for at least 3 months were invited to participate; ultimately, 32 parents attended focus groups held at the pediatric clinic where TbT recruitment took place. Focus group transcripts were iteratively coded for salient themes using a qualitative software program. Multiple outside researchers were brought in to check the potential biases of study authors and ensure the credibility of findings.

SAMPLE WEEK OF TEXTS

DOC SAYS: Now is a good time for children to begin learning the differences between UPPER & lower-case letters, and important skill for reading & writing.

DOC SAYS: Hunt for UPPER & lower-case letters in a book or magazine. Pick a letter (m). Show your child an m & an M. How many of each can they find?

DOC SAYS: Keep working on UPPER & lower-case letters to prepare for school! In a book, show your child that sentences & names start with UPPER-case letters.

The insights shared by focus group participants were organized into four themes:

First, participants spoke of how the TbT program empowered parents as teachers. One mother referred to the texts as a “guidebook” with small and accessible strategies to engage their child in learning. Some mentioned the texts helped increase time teaching within a busy day, though one parent mentioned at times there were too many messages and not enough opportunities to accomplish all the activities.

Second, participants cited increases in their child’s confidence, skills, and engagement in early learning. Parents mentioned TbT gave children the tools to communicate with others, ask more questions, be more enthusiastic and curious in their learning, and explore the world around them.

Third, participants described how the text messages prompted more conversations throughout the day, strengthening bonds within their family. Families also described how the messages fostered connections in their community too, through sharing of the TbT messages with family members.

Finally, participants talked about the ways the messages strengthened their relationship with their child’s pediatrician. Some families, for instance, leveraged the authority of the pediatrician’s voice when engaging their child in learning, mentioning they would point directly to TbT messages on their phone and tell their child, "The doctor wants us to do an activity."

CONCLUSION

Findings across both studies showcase the promise of pediatric clinics for reaching underserved families and their children and enhancing the scalability and impact of text message-based educational interventions. Because of their near-universal access to large populations of young children, these interventions have the potential to leverage parent-pediatrician relationships in a way that can positively promote engagement and learning at home. Given that the families hardest to reach and with limited access to ECE are those most likely to benefit from ECE opportunities, these cross-sector partnerships can be potentially powerful for supporting child development.

RELATED PUBLICATIONS

Chamberlain, L.J., Bruce, J., De La Cruz, M., Huffman, L., Steinberg, J.R., Bruguera, R., Peterson, J.W., Gardner, R.M., He, Z., Ordaz, Y., Connelly, E., & Loeb, S. (2021). A text-based intervention to promote literacy: An RCT. *Pediatrics*, 148(4), 1-10.

Tips·by·Text: Paper in Brief

Connelly, E., Ordaz, Y., Perez, J., De La Cruz, M., Chamberlain, L., Bruguera, R., Steinberg, J.R., Harris, S., Foreman, J., & Bruce, J. (2021). Clinic-based school readiness: A qualitative examination of a text messaging intervention. *Journal of Health Care for the Poor and Underserved*, 32(2), 43-61.