

Enhancing Parent Talk, Reading, and Play in Primary Care: Sustained Impacts of the Video Interaction Project

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Objective To determine the early impacts of pediatric primary care parenting interventions on parent cognitive stimulation in low socioeconomic status families and whether these impacts are sustained up to 1.5 years after program completion.

Study design This randomized controlled trial included assignment to 1 of 2 interventions (Video Interaction Project [VIP] or Building Blocks) or to a control group. Mother–newborn dyads were enrolled postpartum in an urban public hospital. In VIP, dyads met with an interventionist on days of well-child visits; the interventionist facilitated interactions in play and shared reading through provision of learning materials and review of videotaped parent–child interactions. In Building Blocks, parents were mailed parenting pamphlets and learning materials. We compare the trajectories of cognitive stimulation for parents in VIP and control from 6 to 54 months.

Results There were 546 families that contributed data. VIP was associated with enhanced reading, parent verbal responsivity, and overall stimulation at all assessment points, with analyses demonstrating a 0.38 standard deviation increase in cognitive stimulation overall. Trajectory models indicated long-term persistence of VIP impacts on reading, teaching, and verbal responsivity.

Conclusions VIP is associated with sustained enhancements in cognitive stimulation in the home 1.5 years after completion of the program and support expansion of pediatric interventions to enhance developmental trajectories of children of low socioeconomic status. (*J Pediatr* 2018;■■■:■■■-■■■).

Trial registration [Clinicaltrials.gov](https://clinicaltrials.gov): NCT00212576.

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Differences in the early home environment related to the amount of cognitive stimulation provided by parents, such as reading, teaching, and overall verbal responsivity, explain much of the variance in child developmental outcomes.¹⁻⁴ Furthermore, evidence suggests that both the quantity and quality of these interactions in the home vary markedly by socioeconomic status (SES).⁵⁻⁷ Therefore, parent–child interactions are important targets for preventive interventions aiming to reduce poverty-related disparities in developmental outcomes.

The pediatric primary care platform offers unique opportunities to widely implement strategies to bolster parent–child interactions and prevent the emergence of poverty-related disparities; this is due to the near universality of access, the frequency of contact, and the potential for low cost afforded by leveraging existing resources.⁸ The Video Interaction Project (VIP) is a pediatric healthcare intervention, built on the Reach Out and Read (ROR) model,^{9,10} which is designed to capitalize on these opportunities beginning at birth. VIP provides learning materials, such as toys and books, and uses review and reinforcement of positive parenting behaviors in the context of videotaped parent–child interactions, led by a designated parenting coach who meets one on one with families at the time of well-child visits. In a pilot randomized, controlled trial, VIP was found to enhance parenting, including reported reading, teaching, and verbal responsivity^{11,12} and observed mother utterances.¹³ However, because impacts were not assessed beyond the intervention conclusion, it is unknown whether VIP impacts on parenting may be

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BB	Building Blocks
ROR	Reach Out and Read
SES	Socioeconomic status
StimQ ₂ -I	StimQ Infant Revised
StimQ ₂ P	StimQ Preschool Revised
StimQ ₂ T	StimQ Toddler Revised
VIP	Video Interaction Project

sustained long term, an important criterion for program effectiveness as highlighted by the US Department of Health and Human Service.¹⁴ A second, larger randomized, controlled trial called the Bellevue Project for Early Language, Literacy, and Education Success, continued follow-up of VIP families beyond intervention conclusion and is providing the opportunity to address this need. This randomized, controlled trial also includes a sample with greater sociodemographic diversity than the prior randomized, controlled trial, particularly regarding level of education and social risk, and helps to determine whether VIP impacts on parenting extend to a broader population of low SES families. In this randomized, controlled trial, VIP is being evaluated alongside a lower intensity intervention called Building Blocks (BB) and a control group receiving ROR as standard of care. Early findings from this randomized, controlled trial reported the emergence of parenting impacts at child age 6 months related to both VIP and BB, with effects of VIP being more robust and pronounced.¹⁵ The primary goal of the current investigation is to assess whether these early VIP impacts were sustained over the intervention period as well as at 1.5 years after intervention completion. We hypothesized that VIP would be associated with enhanced parenting compared with controls, with impacts sustained beyond program completion. We also investigated whether BB would continue to be associated with enhanced parenting during late infancy/toddlerhood.

Methods

We performed a single-blind, 3-way randomized, controlled trial, with parent-child dyads assigned to 1 of 2 intervention strategies (VIP and BB) or to a control group receiving ROR only (as standard of care). Institutional review board approval was obtained from New York University School of Medicine, Bellevue Hospital Center, and the New York City Health and Hospitals Corporation. Parents provided informed consent before participation. The trial was registered at clinicaltrials.gov (NCT00212576).

Enrollment was performed in the postpartum ward of an inner-city public hospital (Bellevue Hospital Center) serving low SES, primarily immigrant families, between November 2005 and October 2008. Consecutive mother-newborn dyads planning to receive pediatric primary care at our institution and meeting eligibility criteria were enrolled, designed to provide homogeneity of medical status across groups, enhance feasibility, and reduce likelihood of receipt of prior/concurrent comparable services. Eligibility criteria were: no significant medical complications (requiring extended stay or transfer to level II/III nursery, or with potential adverse developmental consequences), full-term gestation (>37 weeks), birth weight >2500 g, and singleton gestation. Feasibility criteria were: mother as primary caregiver, mother able to maintain contact (working phone, intention to maintain geographic proximity), and mother's primary language English or Spanish. Criteria for no prior or concurrent services were: mother >18 years (because adolescent mothers routinely receive parenting services at our institution) and no participation in a prior study of VIP or BB.

After enrollment, dyads were randomized to VIP, BB, or control using a random number generated using Microsoft Excel (Microsoft, Inc, Redmond, Washington). Randomization group assignments were concealed from research assistants performing enrollment. Families in all groups received the same well-child care, delivered by the same primary care pediatricians. Beginning at 6 months of age, all families received ROR as standard of care. VIP, BB, and control, the 3 groups analyzed in this study, are described.

VIP

VIP, which has been previously described,¹⁶⁻¹⁹ takes place from birth to 3 years, with up to fifteen 25- to 30-minute sessions taking place primarily on the day of primary care visits. Sessions are facilitated by an interventionist, who meets one on one with families, providing an individualized, relationship-based intervention. At each session, parent-child dyads are video-recorded for approximately 5 minutes while interacting with a developmentally appropriate toy and/or book provided by the program. These recorded interactions are then reviewed together by the interventionist and the parent, while the interventionist indicates instances of positive parenting behaviors during the interaction (eg, responding to vocalizations, engaging in conversation), in effect reinforcing these behaviors and promoting self-reflection on the part of the parent. To promote generalization of positive parenting behaviors in the home, the video is given to the parent to take home, along with the learning material used in the interaction. Parents are also given pamphlets that provide suggestions for interactions in the contexts of play, shared reading, and everyday routines, and also encouraged to develop plans for interactions to promote their child's development. VIP is estimated to cost \$150-\$200 per child per year at scale.¹³

BB

As described,^{16,19} BB uses mailed parenting pamphlets and learning materials to promote parenting self-efficacy and positive parent-child interactions. Each month, parents are mailed a toy or book, along with a newsletter that provides information on encouraging learning and ideas for interactions around a specific developmental goal. Parents are also asked to fill out the Ages and Stages developmental questionnaires every 4-6 months. BB has an estimated cost of \$75-\$100 per child per year.¹⁹

Control

As described, control families received all standard pediatric care, including all routine anticipatory guidance, and developmental surveillance. In addition, ROR was delivered to participants in all 3 groups.

Measures

As described elsewhere, we assessed baseline sociodemographic and other data characterizing the sample based on parental interview at enrollment.¹⁵ For parents, this included mother's age, country of origin, education level, primary language spoken, and marital status, and family Hollingshead Four

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