جائزة خليفة التربوية
Khalifa Award for Education

Khalifa International Award for

Early Learning



Prof. Abu S. Shonchoy | Dr. Johannes Bos,

Prof. Saravana Ravindran | Dr. Akib Khan

Winner of the 2026 Khalifa International Award for Early Learning:

Best Research and Studies Category

Doing More with What Exists: Scaling Early Childhood Development through Public Infrastructure

Classified as Organization Internal – For internal use only

Abstract

Millions of children in low-income contexts fail to reach their developmental potential due to poverty, malnutrition, and lack of early stimulation (Richter et al.,2017). Our research, (Bos et al., 2024), addresses this critical challenge by developing and rigorously evaluating an innovative early childhood development (ECD) program delivered at scale through an existing government service platform. We conducted a cluster-randomized controlled trial in Bangladesh, integrating a low cost psychosocial stimulation intervention into the national health and nutrition system without hiring new staff or providing additional monetary or non-monetary incentives. In this trial, over 18,000 children across 78 communities across the country received monthly home visits with parental counseling and play materials alongside routine health services, while control communities received standard services (status quo). The results demonstrate sizable improvements in children's cognitive development in the treated communities (0.17 standard deviation [SD] points), higher language skills (0.23 SD points), and greater socio-emotional development(0.12–0.14 SD points) after 15 months of intervention. Our treatment also reduced childhood undernutrition, lowering wasting and underweight rates by 4.8 and 2.9 percentage points, respectively, and increased the school enrollment of older siblings in beneficiary households. At a cost of only $6.84 per child, the program achieved an estimated internal rate of return of about 19%. These findings provide the first experimental evidence from South Asia that ECD interventions can be scaled effectively through existing government systems. This work is highly innovative in policy and implementation approach, of great importance to global early learning, executed with rigorous methods, and has demonstrated substantial impact on children, families, and service delivery. It offers a model for sustainably improving early learning outcomes at scale in resource-constrained settings.

Classified as Organization Internal – For internal use only

Doing More with What Exists: Scaling Early Childhood Development through Public Infrastructure

Background

Early childhood is a foundational period for cognitive, language, and socio-emotional development, with lasting implications for schooling attainment, health, and labor market outcomes (Cunha et al., 2010; Knudsen et al., 2006; Almond and Currie, 2011; Black et al., 2017). Yet in low- and middle-income countries, many children experience early deprivations—including undernutrition, limited responsive caregiving, and scarce early learning opportunities—that hinder the development of key human capital skills (Lu et al., 2016; Richter et al., 2017). These challenges are particularly salient in low-income countries, particularly in South Asia, where child undernutrition has historically been high, and access to structured early learning opportunities among young children has been limited (Bos et al., 2024).

A central policy question is not whether early childhood interventions can work, but whether governments can deliver them at scale in a sustainable way. Much of the landmark evidence on early stimulation comes from intensive, tightly supervised programs implemented in relatively small samples—for example, the classic Jamaica stimulation intervention and its long-run follow-ups (Grantham-McGregor et al., 1991; Gertler et al., 2014). While such studies establish the potential for large benefits, scaling these approaches nationally often requires substantial new infrastructure, dedicated personnel, and ongoing financing. Moreover, even promising interventions may experience “voltage drops” when implemented at scale due to weaker monitoring, diluted fidelity, and supply-chain constraints (List, 2022). As a result, governments frequently face a dilemma: the interventions with the strongest evidence are often those that are most difficult to scale.

In this project, Bos et al. (2024), we address this gap by evaluating whether a low-cost early childhood development (ECD) package can be integrated into Bangladesh’s existing public health and nutrition delivery platform—the National Nutrition Services (NNS)—and still produce meaningful gains in child development. The core idea is to leverage a pre-existing service-delivery infrastructure with national reach, rather than building a parallel ECD system (Richter et al., 2017). Bangladesh offers an ideal setting to study this question because NNS already provides routine maternal and child health and nutrition services through community clinics and home visits, creating a natural platform for adding stimulation and responsive caregiving content.

Classified as Organization Internal – For internal use only

Intervention Details

We experimentally evaluated a large-scale, low-cost home-visiting intervention designed and implemented by Save the Children and integrated into Bangladesh's National Nutrition Services (NNS). The intervention targeted children aged 3–18 months at baseline and was implemented over approximately 15 months (June 2014–August 2015) in the catchment areas of 78 community clinics across three districts located in three divisions of Bangladesh. Community clinic catchment areas were randomly assigned to either (i) the integrated ECD plus NNS treatment arm or (ii) the status quo NNS-only control arm. Importantly, the intervention did not provide additional financial (or non-financial) incentives to frontline service providers; instead, it relied on training, materials, and integration into routine workflows.

The ECD program combined three core components:

1. **Training of existing NNS workers on ECD:** Frontline NNS workers received focused training on early stimulation and responsive caregiving, including how to counsel caregivers and demonstrate age-appropriate activities during routine contacts.
2. **Provision of low-cost, caregiver-facing materials:** The program distributed a set of simple, visual tools intended to support daily play, communication, and stimulation at home. These materials included (i) a Child Development Card with age-specific recommendations and visual prompts, (ii) two picture books illustrating familiar objects and scenes to encourage interaction and vocabulary development, and (iii) a Key Message Booklet summarizing counseling content and clinic visit guidance. See Figures 1 and 2 for reference.
3. **ECD counseling embedded in routine service delivery:** Trained NNS workers incorporated ECD counseling into their existing schedule of household visits and related contacts (e.g., clinic visits and community health events), demonstrating how caregivers could use the provided materials and integrate stimulation into everyday routines.

This design allowed the intervention to be implemented at large scale while keeping marginal costs low. At the same time, it created a realistic test of integrated delivery under conditions similar to what governments face when adopting new responsibilities within existing systems: limited monitoring capacity, competing time demands, and heterogeneous service quality (Bos et al., 2024; List, 2022). Accordingly, our evaluation measured not only child development outcomes, but also service-delivery responses (including time allocation and counseling content), parental investments and behaviors, potential spillovers within households, and a full cost-effectiveness assessment.

Classified as Organization Internal – For internal use only

Innovativeness

The research introduces a novel approach to delivering early childhood education and care at scale by leveraging an existing public-sector platform. Traditionally, successful ECD interventions (such as intensive parenting programs or preschool centers) have been small-scale and resource-intensive, often relying on dedicated staff or external support (Gertler et al., 2014; Yousafzai et al., 2014). Scaling these models has proven difficult, as many programs lose effectiveness when expanded due to logistical and financial challenges (List, 2022). In contrast, our approach integrates a psychosocial stimulation program into the government's ongoing health and nutrition services, using community health workers already in place. This integration allowed us to reach a large population of children without creating a parallel delivery infrastructure or providing monetary incentives to service providers.To our knowledge, this is one of the first rigorously evaluated ECD interventions implemented at such a scale in a low-income country's public system. Comparable efforts to embed early stimulation into existing services are exceedingly scarce: only two other studies globally have tested similar models, one in Colombia and one in China (Attanasio et al., 2022; Sylvia et al., 2020). Our project is the first of its kind in South Asia. Moreover, unlike the Colombian trial, which added supplemental nutrition and frequent group sessions (Attanasio et al., 2022), and the Chinese program, which operated through a different agency (Sylvia et al., 2020), our intervention was a lighter-touch, low-cost model designed for ease of replication by resource-constrained governments. This innovative strategy demonstrates how to achieve meaningful gains in early learning through a creative reconfiguration of existing services, an approach that challenges the conventional assumption that only intensive, stand-alone programs can significantly improve developmental outcomes. By pioneering a scalable, government-led solution, the research offers a groundbreaking model that can inspire new creative approaches to early learning in similar contexts.

Importance

Early childhood is a formative period that shapes lifelong trajectories of health, learning, and productivity. Intervening during this window can yield immense benefits, especially for disadvantaged children (Cunha et al., 2010). However, prior to our work, many children in countries like Bangladesh had little access to quality early learning opportunities. Around the time of our study, approximately 42% of Bangladeshi children under five were chronically malnourished (stunted), and only about 13% of children aged 3–5 attended any form of preschool (Bos et al., 2024). These statistics underscore a critical need for effective early learning programs in such settings.Our research addresses a problem of high significance: how to improve early development outcomes for vast numbers of underserved children in low-resource environments. By focusing on a population of infants and toddlers in impoverished rural communities, the study tackles an urgent issue faced by families, communities, and policymakers—the developmental delays and losses stemming from poverty and lack of early

Classified as Organization Internal – For internal use only

stimulation (Richter et al., 2017).The significance of this work is further highlighted by evidence that early developmental deficits can have long-term consequences, but also that early interventions can produce lasting gains. Seminal studies from Jamaica, for instance, showed that psychosocial stimulation in the first years of life led to improved cognitive function (Grantham-McGregor et al., 1991) and even 20-year gains in earnings for participants when they reached adulthood (Gertler et al., 2014). Building on these insights, our study is important because it demonstrates a path to bring such life-changing early interventions to scale within a national system. In doing so, it provides evidence that large-scale, real-world programs can deliver significant benefits to children's learning and development, not just small pilot projects. The findings contribute new insights into how health and education sectors can collaborate to support early learning at population level. This is particularly important for influencing policy: our success shows that governments can feasibly integrate ECD into routine services, a strategy that could be applied in other countries to help millions of children. By addressing a critical gap—scalable solutions for early learning in low-income contexts—this research holds substantial importance for the field of early childhood development and for informing equitable education policy globally.

Methodological Rigor

The study was designed and conducted with the highest standards of methodological rigor. We implemented a cluster-randomized controlled trial (RCT) across 78 community clinic catchment areas (clusters) in three divisions of Bangladesh. Random assignment of communities to treatment or control groups ensured that any differences in child outcomes could be causally attributed to the intervention. Given the nature of the program, cluster-level randomization was crucial to avoid spillovers between participants. We collected comprehensive baseline data on children, families, and service providers before the intervention, and a detailed endline survey after 15 months of program implementation. All outcome assessments (covering cognitive, language, socio-emotional, and health domains) used internationally validated instruments administered by trained enumerators who were blinded to the treatment status of each community. This blinding reduced potential measurement bias. The evaluation also incorporated novel data collection on the service delivery process—for example, tracking health worker time use and parental behaviors—to thoroughly understand mechanisms and ensure internal validity of findings. We achieved a high follow-up rate among the original sample, minimizing attrition concerns. Our analysis applied appropriate statistical techniques accounting for the clustered design and controlled for baseline characteristics, and we pre-specified the primary outcomes in the RCT registry to avoid data mining. The results underwent rigorous robustness checks (such as tests for differential attrition and multiple hypothesis corrections), all of which confirmed the credibility of the core findings. Moreover, the research was conducted in an ethical manner with informed consent and was registered in the AEA RCT registry prior to implementation, underscoring our commitment to transparency.

Classified as Organization Internal – For internal use only

Finally, the study's quality has been vetted through peer review: the findings were published in a leading economics journal, indicating that independent experts have scrutinized and validated the research methods and conclusions. In sum, the combination of a randomized design, careful measurement, thorough analysis, and external peer review exemplifies a level of methodological rigor that provides great confidence in our results and their interpretation.

Impact

This research has demonstrated substantial impact in both the short-term outcomes for participants and the broader implications for practice and policy. Children in the intervention communities showed markedly better developmental outcomes compared to those in control communities. The gains in cognitive, language, and socio-emotional skills (ranging from 0.12 to 0.23 standard deviation points) are equivalent to closing a significant fraction of the developmental gap caused by early deprivation. These effect sizes, achieved at scale, approach those of some of the most successful smaller-scale programs in the literature (Yousafzai et al., 2014), underscoring the practical significance of our results. In addition, the intervention produced positive spillover effects: older siblings of the target children were more likely to be enrolled in school, suggesting that promoting one child's early development can influence schooling decisions for other children in the household. Importantly, our approach improved nutritional status rather than compromising it—countering fears that adding responsibilities for health workers might detract from existing health services. The reductions in moderate acute malnutrition (wasting) and underweight prevalence indicate that integrating stimulation with nutrition services can simultaneously advance children's health and learning.

With an average cost of under $7 per child, the program offers a highly cost-effective model. We estimate a nearly 19% internal rate of return, comparing favorably with returns on investment reported for early education programs in high-income settings (Gertler et al., 2014). This means that the benefits in terms of improved human capital are very large relative to the resources invested, making a compelling economic case for scale-up. By proving that a low-cost, government-implemented ECD intervention can yield significant benefits, the research has strong implications for policy and practice. Our findings have been shared with Bangladesh's Ministry of Health and Education stakeholders, contributing to discussions on national early childhood policy. The evidence is already informing plans to potentially integrate similar ECD components into broader maternal and child health programs. Furthermore, this work has been disseminated globally (through publication and presentations), influencing the international early childhood development community. It addresses a key question for scaling: how to maintain "voltage" when expanding an intervention (List, 2022). Our success in a real-world government setting provides proof of concept that can be adapted to other

Classified as Organization Internal – For internal use only

countries with community health worker networks. The study thus has the potential to impact not only its direct participants but also countless children as the model is replicated elsewhere. Finally, in academic terms, the research advances knowledge by filling a gap in the literature about large-scale implementation. It offers a model of methodological and operational lessons for future studies aiming to merge early learning support with public systems. In conclusion, the documented improvements in child outcomes, combined with a clear pathway to scale and high cost-effectiveness, highlight the profound impact of this research on improving early learning and its significant promise for shaping better practices and policies in early childhood education globally.

Classified as Organization Internal – For internal use only

References

Almond, D. and Currie, J. (2011). Human capital development before age five. *Handbook of Labor Economics*, 4:1315–1486.

Attanasio, O. P., Baker-Henningham, H., Bernal, R., Meghir, C., Pineda, D., and Rubio-Codina, M. (2022). Early stimulation and nutrition: The impacts of a scalable intervention. *Journal of the European Economic Association*, 20(4):1395–1432.

Black, M. M., Walker, S. P., Fernald, L. C. H., Andersen, C. T., DiGirolamo, A. M., Lu,C., McCoy, D. C., Fink, G., Shawar, Y. R., Shiffman, J., Devercelli, A. E., Wodon, Q. T., Vargas-Bar´on, E., and Grantham-McGregor, S. (2017). Early childhood development coming of age: Science through the life course. *The Lancet*, 389(10064):77–90.

Bos, J. M., Shonchoy, A. S., Ravindran, S., and Khan, A. (2024). Early childhood human capital formation at scale. *Journal of Public Economics*, 231:105046.

Cunha, F., Heckman, J. J., and Schennach, S. M. (2010). Estimating the technology of cognitive and noncognitive skill formation. *Econometrica*, 78(3):883–931.

Gertler, P. J., Heckman, J. J., Pinto, R., Zanolini, A., Vermeersch, C., Walker, S., Grantham-McGregor, S., et al. (2014). Labor market returns to an early childhood stimulation intervention in jamaica. *Science*, 344(6187):998–1001.

Grantham-McGregor, S. M., Powell, C. A., Walker, S. P., and Himes, J. H. (1991). Nutritional supplementation, psychosocial stimulation, and mental development of stunted children: the jamaican study. *The Lancet*, 338:1–5.

Knudsen, E. I., Heckman, J. J., Cameron, J. L., and Shonkoff, J. P. (2006). Economic, neurobiological, and behavioral perspectives on building america's future workforce. *Proceedings of the National Academy of Sciences*, 103(27):10155–10162.

List, J. A. (2022). *The Voltage Effect: How to Make Good Ideas Great and Great Ideas Scale. Currency*.

Lu, C., Black, M. M., and Richter, L. M. (2016). Risk of poor development in young children in low-income and middle-income countries: An estimation and analysis at the global, regional, and country level. *The Lancet Global Health*, 4(12):e916–e922.

Richter, L. M., Daelmans, B., Lombardi, J., Heymann, J., Lopez Boo, F., Behrman, J. R., Lu, C., Lucas, J. E., Perez-Escamilla, R., Dua, T., Gertler, P., and Grantham- McGregor, S. (2017). Investing in the foundation of sustainable development: pathways to scale up for early childhood development. *The Lancet*, 389(10064):103–118.

Sylvia, S., Warrinnier, N., Luo, R., Yue, A., Attanasio, O., Medina, A., and Rozelle, S. (2020). From quantity to quality: Delivering a home-based parenting intervention through china's family planning cadres. The Economic Journal, 131(635):1365–1400.

Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Armstrong, R., and Bhutta, Z. A. (2014). Effect of integrated responsive stimulation and nutrition interventions in the lady health worker programme in pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *The Lancet*, 384(9950):1282–1293.

Classified as Organization Internal – For internal use only

Figure 1: Child Development Card (Page 1)



Figure 2: Key Message Booklet Excerpt



Classified as Organization Internal – For internal use only

For technical support or issues related to the online application system el.support@khaward.ae

For any questions or inquiries related to the KIAEL el.info@khaward.ae

el.khaward.ae

Classified as Organization Internal – For internal use only