

Early child development programmes: further evidence for action



With the recognition that early child development lays the foundation for subsequent academic and social performance, economic productivity, and societal contributions, support for early child development programmes and policies has increased worldwide.¹ Longitudinal studies and neuroscientific evidence have shown that, during the formative periods of children's development, brain architecture and functioning are responsive to environmental conditions (both adversities and nurturance), which continue throughout life and into the subsequent generation.²⁻⁴ In response to the role of early child development in building human capacity, the Sustainable Development Goals (SDGs) include two targets for children younger than 5 years: meet developmental milestones (indicator 4.2.1) and participate in organised learning before primary school (indicator 4.2.1). The SDGs hold countries accountable for measuring and reporting on these targets.

Attention to early child development programmes and policies is desperately needed because millions of young children in low-income and middle-income countries (LMICs) are not meeting SDG targets. Estimates based on population-level indicators of nutrition (stunting) and extreme poverty show that 39% of children younger than 5 years in LMICs are at risk of not reaching their developmental potential,⁵ and initial estimates from UNICEF's Early Childhood Development Index (ECDI) based on reports from nearly 100 000 caregivers show that 36.8% of children aged 3 and 4 years in LMICs do not achieve basic cognitive and socioemotional skills.⁶ ECDI scores are positively associated with caregiver-child joint activities such as reading, playing, listening to stories, counting, singing, or travelling outside of home, illustrating the centrality of the caregiving environment to child development.⁶

Caregiver-child activities are at the heart of many early child development programmes. One review⁷ concluded that health-care workers in LMICs can implement effective strategies for caregiver behaviour change related to early child development. To be effective, strategies should address various aspects of caregiving (eg, feeding, communication, and play activities), include frequent contact with health-care

workers (eg, twice per month), start early before the onset of dysfunctional caregiver-child interactions, and be of sufficient duration to enable caregivers to practise and normalise the behaviours (eg, 12 months).^{7,8} In a Jamaican study with more than 20 years of follow-up, in adults (aged 25 years) who were stunted early in life, individuals who received caregiver-child enriched activities for 2 years through home visits had higher cognitive functioning; less anxiety, depression, and violence; and greater earnings than individuals who had been randomly assigned to the control group.^{2,5,9}

Strategies to promote early child development are multidimensional, and include health, nutrition, care, early learning, and social protection. No single sector incorporates all dimensions; therefore early child development programmes are often fragmented, and beyond the responsibility of any single sector. With no sector ownership or advocacy, early child development programmes are at risk of not being used consistently across sectors and not incorporated into sustainable systems or national policies.

The Care for Child Development Program (CCDP)¹⁰ developed by UNICEF and WHO incorporates many necessary dimensions of early child development into a package that can be implemented through home visits by community health workers. The CCDP served as a basis for the Pakistan Early Development Study,¹¹ which is a powerful illustration that paid government workers (Lady Health Workers from the National Programme for Family Planning and Primary Healthcare) can successfully implement an integrated, home-based care (responsive stimulation) and nutrition programme over a 2 year period, with positive effects on children's development observed at 24 months. In *The Lancet Global Health*, Aisha Yousafzai and colleagues¹² now show that these effects extend to 4 years of age—2 years after the end of the formal intervention. In children at 4 years of age, the responsive stimulation intervention led to higher scores on measures of IQ, executive functioning, pre-academic skills, and pro-social behaviour, and to an enriched caregiving environment based on observations of caregiving behaviour and the home environment.

See [Articles](#) page e548

There were several unexpected findings, mainly related to the absence of an effect of nutrition intervention on height and weight measurements and haemoglobin concentration, and the absence of synergistic benefits when both care and nutrition interventions were given together. One possible explanation is the low uptake of the micronutrient supplement, as previously reported.¹¹ To ensure that children's needs are addressed across multiple dimensions, future efforts should focus on strengthening interventions to promote children's nutrition that can be incorporated into responsive stimulation interventions.

Findings from the trial by Yousafzai and colleagues¹¹ provide convincing evidence that early child development intervention can be successfully implemented by well trained and well supervised government health workers with effects that alter caregiver-child behaviour and are sustained through the preschool period. These findings contribute to the growing body of evidence that early child development programmes alter the course of children's development, even in the presence of chronic caregiver stress stemming from poverty, food insecurity, and persistent child undernutrition. Efforts such as the Global Action on Early Childhood Development launched by the World Bank and UNICEF¹³ promote national programmes and policies to advance early child development. Ensuring that children achieve developmental skills early in life and have ongoing access to high-quality learning opportunities, as proposed by the SDG targets, will provide sustainable economic and social benefits that extend from individuals to nations.

*Maureen M Black, Kristen M Hurley

Research Triangle Institute, Research Triangle Park, NC 27709, USA (MMB); Department of Pediatrics, University of Maryland School of Medicine, Baltimore, MD 21201, USA (MMB); and Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA (KMH) mblack@peds.umaryland.edu

We declare no competing interests.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY license.

- 1 UN. Transforming our world: the 2030 agenda for sustainable development. New York: United Nations General Assembly, 2015. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=en (accessed July 3, 2016).
- 2 Gertler P, Heckman J, Pinto R, et al. Labor market returns to an early childhood stimulation intervention in Jamaica. *Science* 2014; **344**: 998–1001.
- 3 Johnson SB, Riis JL, Noble KG. State of the art review: poverty and the developing brain. *Pediatrics* 2016; **137**: e20153075.
- 4 Walker SP, Chang SM, Wright A, Osmond C, Grantham-McGregor SM. Early childhood stunting is associated with lower developmental levels in the subsequent generation of children. *J Nutr* 2015; **145**: 823–28.
- 5 Grantham-McGregor S, Cheung YB, Cueto S, Glewwe P, Richter L, Strupp B. Developmental potential in the first 5 years for children in developing countries. *Lancet* 2007; **369**: 60–70.
- 6 McCoy DC, Peet ED, Ezzati M, et al. Early childhood developmental status in low-and middle-income countries: national, regional, and global prevalence estimates using predictive modeling. *PLoS Med* 2016; **13**: e1002034.
- 7 Elder JP, Pequegnat W, Ahmed S, et al. Caregiver behaviour change for child survival and development in low-and middle-income countries: an examination of the evidence. *J Health Commun* 2014; **19** (suppl 1): 25–66.
- 8 Walker S, Chang S. Effectiveness of parent support programmes in enhancing learning in the under-3 age group. *Early Childhood Matters Magazine* (The Hague), 2013. http://earlychildhoodmagazine.org/wp-content/uploads/2013/06/10-ECMnr120_Effectiveness-of-parent-support.pdf (accessed July 3, 2016).
- 9 Walker SP, Chang SM, Vera-Hernandez M, Grantham-McGregor S. Early childhood stimulation benefits adult competence and reduces violent behaviour. *Pediatrics* 2011; **127**: 849–57.
- 10 UNICEF. Care for Child Development package. New York, NY: United Nations International Children's Emergency Fund, 2013. http://www.unicef.org/earlychildhood/index_68195.html (accessed July 3, 2016).
- 11 Yousafzai AK, Rasheed MA, Rizvi A, Armstrong R, Bhutta ZA. 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. *Lancet* 2014; **384**: 1282–93.
- 12 Yousafzai AK, Obradović J, Rasheed MA, et al. Effects of responsive stimulation and nutrition interventions on children's development and growth at age 4 years in a disadvantaged population in Pakistan: a longitudinal follow-up of a cluster-randomised factorial effectiveness trial. *Lancet Glob Health* 2016; **4**: e548–58.
- 13 Kim JY. Remarks by the World Bank group president Jim Yong Kim at the early childhood development event. April 14, 2016. <http://www.worldbank.org/en/news/speech/2016/04/14/remarks-world-bank-group-president-jim-yong-kim-early-childhood-development> (accessed July 3, 2016).