Commentary: Early stimulation and child development

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Large numbers of disadvantaged children in low- and middle-income countries do not attain their developmental potential.1 In this issue of the journal, Barros et al.2 report on the development of a birth
cohort at the age of 2 years in Pelotas, Brazil, and demonstrate the importance of child stimulation, particularly for children whose mothers have less education. One of their main conclusions is that interventions to provide cognitive stimulation for disadvantaged children need to be designed. As the authors acknowledge, the evidence is already strong from several efficacy trials and some programme evaluations that both home visiting and centre-based strategies benefit children’s development and that wide-ranging benefits continue into adolescence and adulthood. The need now is for strategies to implement the interventions on a larger scale and for evaluations of their effectiveness. Approaches include the integration of stimulation activities into existing services, such as primary health-care services, by training health workers already employed to include stimulation as part of their regular activities. The WHO Care for Development initiative attempts to increase knowledge and skills of mothers in promoting child development, by providing counselling to mothers on activities to promote development during routine visits by mothers and children to health providers. There are, however, few evaluations of the benefits that can be expected from this approach. It is likely that in addition to counselling, modelling and opportunities to practice behaviours are essential components of successful interventions.

Barros et al. also demonstrate clearly that although stimulation benefited all children, benefits were greatest to children whose mothers had the least schooling (0–3 years). Stimulation interventions have been shown to be of greatest benefit to more disadvantaged children. Targeting of interventions to children at highest risk will likely be necessary both because of the greater benefit to these children and the resource constraints in many countries. As suggested by Barros et al., focusing on less-educated mothers is one approach. Other ways of identifying high-risk children could include those with known biological risks such as intra-uterine growth restriction and childhood undernutrition, and mothers with identifiable risks such as depression or brief screens of the home environment. Composite risk indicators may be most useful in determining children to be included for more intensive intervention such as home visits with supportive strategies such as clinic-based counselling for larger number of mothers and children.

One of the challenges in monitoring progress in reducing the numbers of children whose development is affected and determining the effectiveness of large-scale policy interventions is that accepted methods for assessment of children’s development are time consuming and require substantial training, and therefore development is not routinely assessed. Efforts at finding more rapid assessments include the use of milestones; for example, motor milestones have been included in the WHO growth charts. However, there is limited evidence that motor milestones predict later child outcomes. Another approach is to identify indicators in the child’s home and family environment that can be used to identify children likely to be at developmental disadvantage. Maternal education and poverty have well-established associations with poor development. Nutritional risks such as stunting (height for age ≤–2 SD) before the age of 2 years and iron deficiency anaemia also predict short- and long-term cognitive and behavioural outcomes. Stimulation in the home is also an important proximal predictor of child development. The home observation for measurement of the environment (HOME) is the most well-established measure of the quality of the home environment and has been used in numerous countries. However, the HOME takes about an hour to administer and requires highly trained interviewers. Identification of briefer measures of stimulation that predict child development would be extremely useful. Barros et al. used a scale with only five yes/no items and demonstrated that this was associated with development. Both stimulation and development were assessed at the age of 2 years. Development of this scale is in an important initial step; however, the items in the scale are variable in the strength of the theoretical evidence for inclusion (for example, exposure to television at this age is often considered to be undesirable) and the items ‘watched television in the past week’ and ‘visited other people’s homes in the past week’ had limited variability as the majority of children scored yes. Inclusion of the item taken to the park/playground may have been inappropriate since most of the families did not live near a park or playground. Although all individual items were associated with development, the strongest associations were for the two items most clearly related to language stimulation—having a book and being told a story in the past week, and the overall associations with the scale are likely largely due to these items. Further work in this population to develop a more evidence-based scale would be of value. Hamadani and colleagues in Bangladesh used 19 family care indicators developed through a UNICEF expert consultation, and examined associations with child development at the age of 18 months. Play activities and variety of play materials were most strongly associated with development in the HOME scale.

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References


