

Effective interventions and strategies for improving Early Child Development¹

ABSTRACT

Early childhood years are critical for human development. It is the time when the brain develops most rapidly and the neural connections are formed that are the foundation of a child's physical and mental health and lifelong health and well-being. Adverse experiences in early childhood increase the risk for poor social and health outcomes: low educational attainment, economic dependency, increased violence, crime, substance misuse, and poor mental health, and a greater risk of adult-onset non-communicable diseases, such as obesity, cardiovascular disease, and diabetes. Millions of children globally are living in deprived and vulnerable circumstances and it is estimated that over 200 million children under 5 years of age are unable to attain their full developmental potential. While the global community has made great strides in helping children to survive, too many are unable to thrive. Effective interventions to protect and promote early child development are available and feasible for implementation at scale, in the health, nutrition, education and social protection sectors. They include support for optimal infant and young child feeding; prevention and management of childhood illness; parents to develop skills of sensitivity and responsiveness, play and communication; social protection measures such as conditional cash transfers; attention to maternal physical and mental health and timely intervention; maternal education, quality child care and pre-school education. Sustainable development requires a healthy population. Countries will only be able to reap the benefits of the demographic dividend if they invest in people early. Early childhood, including the first three of years of a child's life, is a window of opportunity that cannot be missed.

1. BACKGROUND AND INTRODUCTION

In the past decade, propelled by efforts to achieve MDG 4, great strides have been made in improving child survival. Child mortality has declined by almost 50%, resulting in around 17,000 fewer children dying every day in 2013 than in 1990. Nevertheless, not all children who survive also thrive and it is estimated that over 200 million children under 5 years of age are unable to attain their full developmental potential¹. Good physical and mental health, achievements in school and work, and the ability to empathize with and help other people all have their roots in early childhood. Today, we understand more than ever the profound

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implications of children being off course in early development and its economic and societal ramifications.

This paper synthesizes evidence of effective interventions for early child development (ECD). It makes the case why early child development should be addressed in a new Global Strategy on Women's Children's and Adolescents Health as an essential area to resolving early inequities, achieving inclusive social and economic development, peace and sustainability. The paper draws upon four sources of evidence. First, it considers WHO's guidance on early child development, beginning with the Commission on Maternal Care and Mental Health led by John Bowlby in 1951ⁱⁱ. Second, it builds on four previous special issues of journals on early child development and the evidence summarized on efficacy and effectiveness of interventions and programs^{iii, iv, v, vi}. Third, it draws upon the conclusions of a Commission on Social Determinants of Health^{vii} and the WHO expert meeting on ECD, held in January 2013 to review state of the art evidence on the role of the health sector in improving ECD^{viii}. And fourth, it considers empirical research on the new science of child development.

2. PROBLEM AND RATIONALE

Child development refers to the acquisition of physical, cognitive, psychological, and socio-emotional skills that contribute to children's increasing competence, autonomy and independence. What a child experiences during the early childhood years – defined as spanning the prenatal period through to formal school entry – sets a critical foundation for the entire life course, and any deficits that occur become more difficult to build on and to 'fix' beyond the early childhood years.^{ix} Because development is the results of the interaction between genes and the environment, adverse experiences in early childhood increase the risk for poor social, cognitive and health outcomes: poor physical and mental health across the lifespan, low educational attainment, economic dependency, increased violence, crime, substance misuse, and, and a greater risk of adult-onset non-communicable diseases.

Genes and experiences interact in a mutually reciprocal fashion to shape the architecture of the brain, which develops most rapidly in the first few years of a child's life when neuroplasticity is greatest. Neural connections that are formed at this time are the foundation for a child's physical and mental health, affecting everything from longevity to the lifelong capacity to learn, from the ability to adapt to the capacity for resilience^x. Supporting children's development therefore is an imperative, especially for the millions of children who survive and grow up in disadvantaged and vulnerable families and communities, and who face multiple adversities.

Risk factors for sub-optimal development are summarized in Table 1. They can be biological or contextual in nature and require responses ranging from those provided at the level of the child, caregiver or family to those that address the wider community and societal environment in which children live and grow. As can be noted, there is a significant concordance between risks that impact on child survival and those that impact on development.

Table 1: Known developmental risks compromising early child development^{xi}

Biological risks	Contextual risks
<ul style="list-style-type: none"> ▪ Intrauterine growth retardation, low birth weight, preterm birth ▪ Sub-optimal breastfeeding practices ▪ Malaria ▪ Protein calorie malnutrition ▪ Iodine deficiency ▪ Iron deficiency ▪ Exposure to environmental lead ▪ Exposure to other environmental toxins (arsenic, mercury, pesticides) ▪ Parasitic infections ▪ Chronic diarrhoea ▪ Childhood HIV infection 	<ul style="list-style-type: none"> ▪ Inadequate opportunities for exploration and learning in the home ▪ Maternal depression and ill health ▪ Insensitive or non-responsive caregiving ▪ Parental use of harsh physical punishment ▪ Exposure to violence including child maltreatment, intimate partner violence and community violence ▪ High levels of parental stress ▪ Crowded or highly chaotic home environments ▪ Caregiver alcohol and substance abuse ▪ Poor quality early care environments outside the home ▪ Being orphaned ▪ Refugee status ▪ Lack of services ▪ Societal stigmatization of children with developmental disabilities

3. RESPONSE AND PRIORITY INTERVENTIONS

The recognition that the genetic-environmental interactions that guide early child development are modifiable has led to a strong focus on ECD. The evidence that early child development programming can improve children's development early in life, leading to better academic performance and mental and physical health during childhood and adolescence, enhanced health indicators, and better economic productivity during adulthood has led to calls for action for policies, programs, and investment in ECD as a strategy to promote equity and sustainable development.^{xii}

Children in the early years require support for development through health, nutrition, care and stimulation. Interventions need to be implemented concurrently to promote good physical and mental health, adequate nutrition and growth, and healthy cognitive-language, socio-emotional and motor development, and freedom from exposure to violence. Programmes and policies that promote stable, responsive and nurturing feeding and caregiving and a safe and supportive environment in which children have opportunities to explore and learn are critical foundations for healthy child development.

A number of studies in low and middle-income countries have in fact demonstrated short and longer term developmental benefits of early intervention programs delivered in the first years of a child's life. Benefits have tended to be greater when the components of early stimulation and parenting support are integrated with health and nutrition interventions, when beginning early (i.e. across the prenatal period and the first three years of life), and when provided for children with greater risks of poor development (e.g. malnourished children, those living in the poorest communities, or experiencing family violence)^{xiii}. A body of research has emerged on combined or integrated nutrition and stimulation interventions that have demonstrated independent and additive effects to child health, learning and growth. More recently, research findings have confirmed the long term benefits of early stimulation on school attainment, earnings, income, and mental health^{xiv}.

Interventions to address the risks span the life course, from adolescence through pregnancy and childbirth, into the early childhood years. The first three years of a child's life, when neuroplasticity for growth and development is greatest, are critical. The health sector therefore has a unique responsibility because it has the greatest reach to children and their families during pregnancy, birth, and in early childhood.

Children not only should survive, they also should be enabled to thrive. We highlight below several critical interventions and intervention areas to support child development that can be well integrated into current services for reproductive, maternal, newborn, child and adolescent health and nutrition. They require facility- as well as community-based programs, and call for a multi-sectoral approach and coordination, in particular with social protection and education sectors.

Responsive care giving and stimulation: One of the most promising ways to promote development for the youngest children in resource-poor communities is the WHO/UNICEF evidence-based intervention on Care for Child Development (CCD). Research on how to promote the learning of key developmental tasks of children through play and communication with a caring adult contributed to the design of CCD^{xv}; country-level adaptations have proven effective in improving a range of early developmental outcomes. The interactive activities encouraged in CCD provide a context for strengthening

the responsiveness of caregivers, a skill needed, for example, for effective feeding practices, protecting a child against maltreatment, and recognizing signs of illness, as well as enriching the child's learning^{xvi}. The intervention has been integrated into existing systems and services, including for child survival, nutrition, mental health, early education, and violence and injury prevention. It has been shown to increase family time spent in children's learning and language use, reduce harsh punitive behaviour, increase the availability of learning materials in the home, reduce childhood illness, and improve the mental health of participating mothers. It has enhanced the effects of nutrition interventions on growth^{xvii xviii}.

Supporting maternal mental health: Starting with Bowlby's seminal work on attachment and lossⁱⁱⁱ, evidence of adverse effects of maternal depressive symptoms on early child development and quality of parenting has accumulated. Nevertheless, the effects of mental health problems of pregnant women and mothers on newborns and young children remains a seriously under-recognized public health problem. One in three to five pregnant women and mothers of newborns experience significant mental health problems which can be recognized through use of simple reliable tools^{xix}. It is now well known that, to improve child development outcomes, mothers with mental, neurological or substance use conditions should be provided with effective interventions to improve their caregiving skills and treat their underlying conditions, as needed. Effective interventions, often implemented by paraprofessionals through home visiting, or by community health workers with specialized training, have been documented.^{xvii, xx}

Preventing child maltreatment: Child maltreatment, sometimes referred to as child abuse and neglect, includes all forms of physical and emotional ill-treatment, sexual abuse, neglect, and exploitation that results in actual or potential harm to the child's health, development or dignity. A quarter of all adults report having been abused as children. One in 5 women and 1 in 13 men report having been sexually abused as a child. Preventing child maltreatment before it starts requires a multisectoral approach, including health, education, legal and social protection services. Programs that show promise in preventing child maltreatment are those that support parents and teach positive parenting skills, including Care for Child Development. They can be delivered through home visitation by skilled personnel, group education, and multicomponent interventions that include child care and pre-school education^{xxi, xxii}.

Importance of multisectoral actions: Poverty is a pervasive determinant of sub-optimal development. Children growing up in poverty often receive poor education, little medical attention, and inadequate nutrition. Lessons from countries that have implemented early child development programs at scale have demonstrated the importance of coordinated actions using multiple delivery platforms (e.g., home visits, community groups, health services, child care programs), providing social protection (e.g., financial support); and building parents' capacities (e.g., vocational training).^{xxiii}

Conditional cash transfer programs, implemented particularly in Latin America, have shown positive nutrition and child development outcomes by breaking the intergenerational effects of poverty.^{xxiv} Similarly community-based child care programs and preschool education programs have potential to contribute to children's cognitive and socio-emotional development provided they are implemented with high quality.^{xxv} They can help address critical issues faced by countries around the world: supporting working families, providing enriched environments for children, developing new employment opportunities for teachers and other caregivers, and empowering women economically.

Innovations: Status quo means failing another generation of children who could be the future leaders and problem solvers to sustain any development progress. Scientific, technological, social and business innovation can transform how we nurture young children so that the highest numbers of children are reached and that every child reached has improved developmental outcomes. Saving Brains, an initiative catalyzed by Grand Challenges Canada, has supported over 70 innovations from low- and middle-income countries that promote healthy brain development in the first 1,000 days that are currently being tested. These innovations are yielding evidence on the long-term impact of known early life interventions on physical, cognitive and socio-emotional development as well as what interventions work for whom, where, and how they are most effectively delivered so resources can generate larger impact for young children. Recent leadership from India, Brazil and South Africa calling for innovations through national *All Children Thriving* competitions conducted in partnership with the Bill & Melinda Gates Foundation bode well for accelerating progress in child development.^{xxvi}

MOVING FORWARD

Implementation of interventions to optimize child development will need clear guidance and political will to promote coordinated governance, increase funding, build capacity and improve measurement and data collection to inform program improvements and accountability for results.

Coordinated governance: Leadership is needed at every level to develop coordinated implementation plans that cut across sectors to address the holistic needs of young children and families. Structures and implementation systems should be put in place that align policies and programs across the age range starting with adolescent health and continuing throughout child-bearing and the early years of life of the children. Coordinated governance should be aligned across the levels of government, and sectors of health, nutrition, education and child- and social protection, and should represent various perspectives, including the public and private sectors as well as civil society.^{xxvii}

as civil society.

Financing: Investing in early childhood is one of the most cost effective strategies to improve health, nutrition, and learning; reduce violence, empower girls and women, promote environmental awareness and ensure productivity of next generation.^{xxviii} Early childhood programs and systems of support have been seriously underfunded. The establishment of coordinated early childhood plans should be a call to action to bilateral and multilateral agencies, national governments and the private sector to dedicate increased funding through traditional and innovative financial instruments, to address the needs of young children, particularly most vulnerable.^{xxix}

Capacity building: Evidence is growing around the world that interventions in the early years can have a profound and lasting impact on child development. Yet in order to scale these interventions, investments are needed in a wide range of services as well as in systems of support to strengthen the health, education and social protection workforces, assure quality, and provide administrative oversight and accountability.

Improved data collection and accountability: Coordinated efforts are underway across the UN agencies and in regions around the world to develop and align new measures to both track child development from the earliest years of life and to monitor the quality of services. New investments, methodological advancements and political will are needed to validate these emerging measures, integrate them into existing data collection efforts and help build data systems that will lead to the type of information that can guide policy. Information will also facilitate consideration of inequities and gaps and call for urgency in remedy. It is through stronger broad-based accountability that the health and development of millions of children can improve and countries will reap the benefits of the demographic dividend through a young generation that is endowed with full capacities.

4. CONCLUSIONS

In September 2015 the Sustainable Development Goals will be adopted at the United Nations, launching an exciting new period in the global effort to end poverty, transform the world to better meet human needs and the necessities of economic transformation, while protecting the environment, ensuring peace, and realizing human rights.^{xxx} As the recent Secretary General report points out, “Millions of people, particularly women and children, have been left behind in the unfinished work of the MDGs”.^{xxxi} This historic moment provides a critical opportunity for a bold new commitment to support healthy child development and family well-being as the foundation for poverty alleviation and sustained prosperity.

Given the integrated nature of child development, young children from preconception to school age will be effected by the goals, targets and indicators established across multiple sectors including health, nutrition, education, social protection, violence prevention and others. While coordination presents some challenges, it also offers unprecedented

opportunity for innovation that can reinforce the importance of a life course perspective to healthy development.

Over the next 15 years the implementation of the early childhood provisions across the Sustainable Development Goals has the potential to transform the way health and human services are delivered and to create a new generation of strong and healthy children. Only through investments in the earliest years of life can we build our human capital and assure economic development for countries around the world.

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ⁱⁱ Bowlby J (1951). Maternal care and mental health. *Bulletin of the World Health Organization* 3:355-533

ⁱⁱⁱ Grantham-McGregor et al. (2007)

^{iv} <http://www.thelancet.com/series/child-development-in-developing-countries-2>

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