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for every child
Early Moments Matter
for every child

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Contents

Foreword ... ii

Introduction: Building brains, building futures ... 1

Chapter 1:
A baby's brain: The science ... 7
Case study: Visiting nurse programme ... 13
Visual: Nutrition, protection, stimulation ... 15

Viewpoint
The H&M Foundation and UNICEF: A partnership for early childhood development ... 17

Chapter 2:
Nutrition ... 19
Case study: Nutrition and nurture in emergencies ... 23

Chapter 3:
Protection ... 25
Case study: The Better Parenting Programme ... 31

Chapter 4:
Stimulation ... 33
Case study: Care for Child Development ... 39
Case study: Pre-primary preparation for Grade 1 ... 45

Chapter 5:
Why invest in early childhood development ... 47
Case study: Reaching Parents with an online portal to information ... 55

Viewpoint
The Long-term Benefits of Quality Early Childcare for Disadvantaged Mothers and their Children ... 57

Chapter 6:
Policies, programmes and partnerships ... 59
Case study: Policies, programmes and partnerships ... 65
Visual: Programmes for children, family and futures ... 67

Viewpoint
Chile Grows with Early Childhood Development ... 69

Chapter 7:
Conclusion ... 71
Visual: Call to action ... 75

Endnotes ... 77

Foreword

What's the most important thing children have? It's their brains. And yet, we're not caring for children's brains the way we care for their bodies, especially in early childhood, when what we do – or fail to do – has an impact on children's futures and the futures of their economies and their societies.

Early Moments Matter for every child, UNICEF's new global report on early childhood development, shows that the period from conception to the start of school opens a critical and singular window of opportunity to shape the development of a child's brain.

The rapid brain growth that happens during this period of life is astounding. At this time, brain connections form at an unrepeated speed, giving shape and depth to children's cognitive, emotional and social development – influencing their capacity to learn, to solve problems and to relate to others. This, in turn, has a significant impact on their adult lives, affecting their ability to earn a living and contribute to their societies . . . even their future happiness.

For millions of the world's most disadvantaged children, we are missing this window of opportunity.

A 20-year study showed that children from poor households who received high-quality stimulation at a young age earned an average of 25 per cent more as adults than those who did not receive these interventions.[1] And yet, governments worldwide spend less than an estimated 2 per cent of their education budgets on early childhood programmes.

FOREWORD

Children who do not receive the nutrition they need are at risk of stunted cognitive and physical development. And yet, at least 155 million children suffer from stunting and millions more are at risk from poor nutrition.[2]

Violence, abuse, neglect and traumatic experiences produce high levels of cortisol – a hormone that produces toxic stress that limits neural connectivity in developing brains.

And yet, around the world, about 246 million children lived in conflict zones in 2015, 75 million were younger than 5. Millions more live in other emergencies.[3]

Emerging research shows that breathing in particulate pollution can break down critical barriers in a child's developing brain, leading to the loss and damage of neural tissue. And yet, around the world, around 300 million children live in areas where the air is toxic, exceeding international limits by at least six times.[4]

What happens to the children exposed to these dangers in their earliest days? And what happens to their societies? When children miss out on the once-in-a-lifetime opportunity presented in early childhood to develop healthy brains and lives, we as a global community perpetuate intergenerational cycles of disadvantage and inequality.

Life by life, missed opportunity by missed opportunity, we are increasing the gap between the haves and the have-nots and undermining our own long-term strength and stability.

For today's children are tomorrow's skilled workers. Doctors. Teachers. Lawyers. Leaders. Their productivity will fuel tomorrow's economies. Their capacity to contribute will shape tomorrow's societies.

What we do now to foster their brain development and potential will determine their futures – and our own.

Anthony Lake
UNICEF Executive Director

Introduction: Building brains, building futures

The early moments of life offer an unparalleled opportunity to build the brains of the children who will build the future.

But far too often, it is an opportunity squandered.

For nations, the price of not investing in early moments is children with poorer health, fewer learning skills and reduced earning potential. It is a weaker economy and a greater burden on health, education and welfare systems. It is intergenerational cycles of disadvantage that hinder equitable growth and prosperity.

For children, especially children from disadvantaged communities, the price of this failure is lost potential.

The science is clear: A child's brain is built, not born.[5] The process begins before birth and involves a complex interplay of neural connections that are shaped by experience and environment.[6] In the early years, these neural connections occur at lightning speed – a speed never again repeated. They establish a foundation of development that will help children grow, learn and thrive. This process is fuelled by adequate nutrition, protection from harm and responsive stimulation including early learning opportunities.

Unfortunately, many millions of children around the world are deprived of the ingredients that foster optimal brain development. They do not have nutritious

food or health care; they are not protected from violence, extreme stress, pollution and conflict; they are starved of responsive stimulation from a caring adult; and they miss out on opportunities to learn. Negative experiences can slow down and alter how neural connections are made in a baby's brain. They can impact a child's ability to grow and learn,[7] and they can even reduce earnings as an adult by up to 25 per cent.[8] For example, exposure to violence, abuse and neglect can produce toxic stress, which when prolonged and extreme, can interfere with the development of neural connections.[9]

Most of the children who miss out in early childhood come from the world's most deprived communities. In low- and middle-income countries, for example, an estimated 43 per cent of children younger than age 5 are at risk of poor development due to extreme poverty and stunted growth.[10] Globally, 155 million children younger than age 5 have stunted growth because of inadequate nutrition and health care.[11] In countries with available data, mostly low- and middle-income countries, about 80 per cent of children aged 2 to 4 are violently disciplined regularly; and there are about 15.5 million 3- and 4-year-olds with whom an adult does not read, tell stories, count, name things or draw.[12]

These deprivations can limit children's development and harm their opportunities in the future. For nations, the loss of individual potential can turn into an unhealthy and ill-equipped workforce. It hampers economic growth and strains education, health and welfare systems. It leads to cycles of deprivation and dependence that can continue for generations.

Reasons to invest

The financial case for investing in children's early moments is strong. The rate of return on investing in early childhood programmes can be about 13.7 per cent.[13] The benefits are reaped in better education and health outcomes, lower crime and higher individual earnings.[14] Investments in children's early development can lead to better individual adult incomes of up to 25 per cent.[15] Investing in early childhood development also benefits nations – supporting a more skilled workforce that is better prepared to take on the future challenges of a global and digital economy.

The cost of investing in early childhood development can be surprisingly affordable because many early childhood interventions can be integrated into existing services. For example, for an estimated average of US$0.50 per person annually, programmes for families with young children can be added to existing health and nutrition services.[16]

Time to act

In many parts of the world, governments and their partners are providing children with adequate nutrition, protection and stimulation – and reaping the benefits.

But it is time to do more. It is time to pick up the pace of progress and transform our knowledge about early childhood development into investments and interventions that support families, communities and nations. It is time to act because we are losing the potential of 43 per cent of children in low- and middle-income countries – a loss we cannot afford.

More than 15 years ago, the Millennium Development Goals helped spur global action to save and improve the lives of millions of children. These efforts helped reduce rates of child mortality by more than half between 1990 and 2015.[17]

Now, the Sustainable Development Goals (SDGs) present an opportunity to build on that progress by helping more children to survive – and thrive.

The SDGs, a road map for creating a better future, recognize the link between early childhood development and equity, productivity, wealth creation and sustainable growth and a more peaceful future. Embedded in the SDGs are targets on malnutrition, child mortality, early learning and violence – targets that outline an agenda for early childhood development.[18]

With this global agenda comes the responsibility to act. We have the science, knowledge and experience. Now, it is up to us to invest in children's brains and their futures. For their sake – and ours.

"Children with a shaky early foundation find each developmental step harder. The differences between children who have a strong start and those who do not are established early, widen quickly and become harder to bridge as time progresses."

Linda M. Richter, Distinguished Research Fellow at the Human Sciences Research Council, University of Witwatersrand in South Africa

Call to action

The evidence is clear: Early childhood development must be a global and national priority.

Governments already have pledged to achieve the early childhood development targets in the Sustainable Development Goals (SDGs). But they need to back up this pledge with action and place early childhood development at the top of their economic and political agendas.

UNICEF calls for governments and partners to:

1. **Invest urgently in services that give young children, especially the most deprived, the best start in life.**
   Increasing the overall share of budgetary allocations for early childhood development programming is a critical step governments can and should take. For example, allocating 10 per cent of all national education budgets to pre-primary education will greatly expand the number of children with access to early learning opportunities,[19] which can improve their educational attainment and increase future earnings. Innovative financing can also help governments reach more children with more effective programming. Approaches can include earmarking taxes to pay for early childhood development services or instituting 'payment by results' frameworks that tie investment to outcomes (see Box 6.1).

2. **Expand access to effective and essential early childhood development services in homes, schools, communities and health clinics.**
   To reach more children and families more cost-effectively, governments and their partners can integrate early childhood interventions into existing services such as routine health screenings at preschools and parenting support as part of home-health visits for new parents. To well-known and effective services such as antenatal care, nutrition support and community-based childcare, these interventions can be added: breastfeeding counselling, guidance on responsive stimulation, early learning, and parenting programmes to protect children from violence.

3. **Make family-friendly early childhood development policies a national priority – and a private sector imperative.**
   Policies, programmes and other support that enable parents and caregivers to provide the best start in life for their children pay off in healthier, better educated children, a better equipped workforce and more sustainable growth. All countries should provide two years of tuition-free pre-primary education, which is critical for early cognitive development and also enables working parents to generate more family income. Key workplace policies include 12 months of paid parental leave; breastfeeding facilities and remunerated breastfeeding breaks for the first six months; and onsite childcare and early learning programmes for the children of employees.

4. **Collect data on essential indicators of early childhood development and track progress.**
   To assess progress towards giving every child the best start in life, we need to measure young children's social, emotional, cognitive, language and motor development against internationally comparable data. As countries track progress towards achieving the specific targets that address young children in the SDGs on health, nutrition, education and protection, they can also disaggregate data to better track equity gaps so they can reach the children in the greatest need.

5. **Provide dedicated leadership for early childhood development programmes and coordinate efforts more effectively across sectors.**
   Early childhood development programmes cut across sectors including health; nutrition; education; protection; and water, sanitation and hygiene. Policies and programmes also need to be integrated. A coordinating minister or body can oversee efforts so they are better integrated and more effective and cost-effective. Similar structures at the provincial, municipal and village level can help reach the most deprived children.

6. **Drive demand for high-quality early childhood development services.**
   Parents and caregivers are the single most important factor in giving children the best possible start in life. Communication for development programming and other public information initiatives can build greater understanding of the critical importance of nutrition, protection and stimulation in helping children reach their full potential. With this understanding, families can generate greater demand for high-quality early childhood development services.

CHAPTER 1

A baby's brain: The science

The early moments of a child's life matter – and their impact can last a lifetime.

Some of these moments may seem small: They might involve a loving smile, a soothing hug, a playful game of peek-a-boo. Other moments are more complex: They are about securing the best nutrition, protecting a child from violence or neglect, reading books and playing games that stimulate the mind and imagination.

But big or small, these moments can alter the development of a child's brain and as a result, impact her health, happiness and ability to learn. They can even affect the amount of money she earns as an adult.[20]

In recent decades, discoveries in neuroscience have greatly improved our understanding of how babies' brains develop. One of the most important discoveries has been this: The brain is built by genes, experience and environment – a combination of nature with nurture.[21]

The process begins well before birth and is influenced by a pregnant woman's health, nutrition and environment. After birth, a baby's brain continues to develop; it generates cells and starts the process of defining and connecting them.[22]

In these earliest days, connections between neurons grow at a speed and complexity that is never again repeated.[23] Research indicates that these connections occur at a pace of at least 1,000 per second. However, recent indications are that the speed could be up to 1 million per second.[24]

The different kinds of neural connections are established sequentially and create the foundation for continuing brain development.[25] The connections created in the early moments influence the parts of the brain that control a child's visual, auditory and language abilities. The prefrontal region of the brain – the part of the brain linked to planning, decision-making and personality – makes rapid complex connections in the early days.[26] This prolific period of neuronal development is instrumental in influencing a child's ability to learn, perform tasks, adapt to change and face difficult circumstances with resilience.[27]

As the brain develops, neural connections are shaped and altered in response to positive and negative experiences.[28] Positive experiences include good nutrition, sensory and motor stimulation, nurturing interactions and protection provided by family members or caregivers. In contrast, negative experiences such as neglect, stress, violence and exposure to pollution also change how neural connections are made in a child's brain. These experiences can significantly hamper early development.[29]

Early childhood development

Brain development is an essential part of early childhood development, the process by which a young child acquires essential physical, motor, cognitive, social, emotional and language skills. These skills allow children to think, solve problems, communicate, express emotions and form relationships. They build the foundation for later life and set the trajectory for health, learning and well-being.

Healthy early childhood development is important for all children. But, in particular, when the most disadvantaged children acquire the skills they need in nurturing and caring environments, they gain a passport out of adversity and into a better life. They, in turn, are in a stronger position to nurture and care for their children, halting intergenerational cycles of disadvantage.

Age and phase

Early childhood development is often understood in phases determined by age. Definitions vary and some include a phase that extends to age 8. UNICEF distinguishes the phases of early childhood development in three categories:[30]

From conception to birth: The prenatal period when health, nutrition and protection for a pregnant woman is essential. Often, the period from conception to about 24 months is regarded as the first 1,000 days. During this time, the brain develops most rapidly and can be greatly influenced by nutrition, protection and responsive stimulation.

Birth to age 3: During this phase, the brain continues to evolve rapidly, and nutrition, protection and the responsive stimulation that comes from play, reading, singing and interactions with loving adults is critical.

Preschool years: From about age 3 to the age when a child begins school. Though health care, nutrition and protection remain important during this phase, early learning opportunities at home and in high-quality preschool settings are also essential.

Nutrition, protection, stimulation

As neuroscience has mapped out an understanding of the brain building process, researchers and early childhood experts have used this knowledge to better understand the ingredients of optimal development and how to provide them to every child.

The basics are **nutrition**, **protection** and responsive **stimulation.** In a series of 2016 articles in *The Lancet*, these basics were included in a concept researchers called 'nurturing care'.[31] The term referred to five elements essential for healthy early childhood development.

Health care: immunization, disease treatment and prevention, safe water, improved sanitation and good hygiene.

Adequate nutrition: a diet that meets the nutrient needs for optimal growth and development,

"Science tells us that early experiences are built into our bodies and shape lifelong learning, behaviour and health. Brains are built over time, and the strength or weakness of its evolving architecture in the first few years influences all later development. Twenty-first-century science underscores our shared responsibility to provide all young children with a strong foundation of responsive relationships, positive learning experiences and health-promoting environments as early as possible so they can grow into resilient adults with the skills to successfully manage the responsibilities of work, citizenship and parenting of the next generation. We cannot let this critical opportunity slip by. The time to invest in the future strength of our nations, our economies and our communities is in the earliest years of life. The clock is always ticking and the time to act is now."

Jack P. Shonkoff, M.D., Director of the Center on the Developing Child at Harvard University

including early initiation and continuation of exclusive breastfeeding for at least six months, diet diversity and frequent feeding.

Protection: from violence, abuse, neglect, environmental hazards including air pollution, and prolonged exposure to other adversities such as those that can come from living in a country affected by conflict.

Responsive caregiving: engagement with a parent or caregiver that can include responsive feeding, playing, singing or talking.

Early learning: access to preschool and other early learning opportunities involving toys, books and interactive engagement with adults and peers.

Taking account of the number of children who receive these critical ingredients is difficult. We know that, too often, it is the most deprived children who miss out. An estimated 43 per cent of children younger than age 5 – 249 million children – are at risk of missing critical development milestones.[32] These global figures from *The Lancet* (Figure 1.1) draw on 2010 data from low- and middle-income countries about the number of children exposed to extreme monetary poverty and stunted growth, both of which are linked to developmental risks in early childhood.[33]

However, millions more children do not have the nutrition, protection and stimulation they need to grow and thrive.

Figure 1.1. Millions of children are at risk of not meeting developmental milestones

Stunting and extreme income poverty from 2004 to 2010 as proxy indicators of early childhood development

	Under-5 population		Number stunted		% stunted		Number living in extreme poverty		% living in extreme poverty		Number at risk of not reaching developmental potential		% at risk of not reaching developmental potential	
	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
East Asia and Pacific	136.2	145.7	34.1	29.6	25%	20%	30.2	18.2	22%	13%	54.7	41.7	40%	29%
Europe and Central Asia	25.4	27.9	4.8	4.8	19%	17%	1.1	0.8	4%	3%	5.6	5.4	22%	19%
Latin America and the Caribbean	56.8	54.1	9.1	8.0	16%	15%	4.9	3.0	9%	6%	11.6	9.7	20%	18%
Middle East and North Africa	32.3	36.5	8.0	8.6	25%	24%	1.1	1.0	3%	3%	8.7	9.1	27%	25%
South Asia	171.4	168.1	80.6	67.6	47%	40%	69.5	46.5	41%	28%	110.9	88.8	65%	53%
Sub-Saharan Africa	124.9	143.3	53.9	55.1	43%	38%	67.5	72.3	54%	50%	87.6	94.8	70%	66%
Total	**547.0**	**575.6**	**190.6**	**173.7**	**35%**	**30%**	**174.3**	**141.8**	**32%**	**25%**	**279.1**	**249.4**	**51%**	**43%**

NOTE: Numbers in millions

SOURCE: Black, Maureen M., et al., 'Early Childhood Development Coming of Age: Science through the life course', *The Lancet*, series 0140-6736, no. 16, 4 October 2016, p. 2. *http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31389-7.pdf*

Case study: Serbia

Visiting nurse programme

It was supposed to be a regularly scheduled visit to the Jovanovic home to provide guidance with the new baby in the family. But when Ivanka Djordjevic, a visiting nurse, arrived, she noticed something irregular.

When Sanja Jovanovic picked up her three-month-old daughter, the baby's head tilted back. For Djordjevic, it was a sign. She suggested that a paediatrician examine the baby, Tea, to check her overall development and make sure her neck, shoulders and arms were developing properly.

Sanja and her husband, Milos Jovanovic, took the warning seriously and returned from the paediatrician appointment with prescribed strengthening exercises. Now, at age 2.5, Tea's motor development is completely on track.

"Tea would have had problems both with her spine and with walking if it hadn't been noticed in time," Sanja said.

Ivanka Djordjevic's timely visit to the Jovanovic household was part of a visiting nurse programme in Serbia aimed at providing support for families of newborns and young children.

Starting in 2014, nurturing care training was added to the visiting nurse programme. The training allowed the nurses to offer parents essential nurturing care advice and support on issues including nutrition, health care, protection, responsive stimulation, bathing, breastfeeding, talking, cuddling and spotting development markers and signs of illness. The visiting nurses also monitor how mothers are coping with their new role.

Djordjevic has visited Tea and her parents at home since the child arrived home from the maternity centre. These days, when Djordjevic leaves, Tea blows kisses from the comfort of her mother's arms.

"It's the most beautiful job," Djordjevic said.

Nutrition, protection, stimulation

Ingredients of healthy early childhood development

Nutrition and health

Breastfeeding, diet diversity and frequent feeding for optimal growth

Immunization, disease prevention and treatment

+

Protection

From toxic stress, violence, abuse, neglect, environmental hazards, conflict

+

Stimulation

Talk, play, reading, singing, responsive interaction with a loving adult

Quality early learning opportunities

=

A child ready to take on the future

VIEWPOINT

The H&M Foundation and UNICEF: A partnership for early childhood development

BY DIANA AMINI, GLOBAL MANAGER, H&M FOUNDATION

All children have the right to the best start in life. They have a right to good nutrition and the safe and stimulating environments that provide them with the opportunity to develop fully and learn effectively. When these elements are in place for all children, entire communities grow, thrive and create sustainable futures for generations.

However, around the world, a lack of nutrition, protection and opportunity can disrupt early childhood development and affect a child's social and economic future. This reality has motivated the H&M Foundation to act.

The H&M Foundation is based on the spirit of entrepreneurship and determination to drive long-lasting positive change. By partnering with prominent organizations, including UNICEF, we have been able to create opportunities for people and their communities. These partnerships have allowed us to be part of the systemic change needed to be able to achieve the Sustainable Development Goals, the world's agenda for a better world.

As part of a global partnership, UNICEF and the H&M Foundation are working together to unleash children's potential. Together, we have reached out to more than 100,000 children with programmes that boost their early development and help them learn and grow.

The H&M Foundation's experience with the global partnership has highlighted a critical piece of early childhood development: parents and caregivers. Educating parents about the importance of providing care, feeding and protection for their children truly makes a difference. As part of the partnership with UNICEF, the H&M Foundation has visited villages around the world and seen that, if children are to develop to their full potential, ongoing support to parents is crucial.

We have also seen first-hand the importance of providing children, teachers and schools with high-quality learning materials and curricula, and we have learned the importance of offering nutritious meals so children are able to take advantage of early childhood learning opportunities.

Providing children with the essentials of healthy early childhood development is a bold step towards achieving the Sustainable Development Goals. Most important, it is a cost-effective strategy for alleviating poverty and for overcoming the challenges that keep children from reaching their potential.

The H&M Foundation is proud of its collaboration with UNICEF. We see our global partnership as a catalyst for extraordinary results for children. The power lies in our shared conviction, passion and determination to create positive, long-lasting change for every child.

CHAPTER 2

Nutrition

Good nutrition is not just about strong bodies. It is equally important for strong minds.

Certainly, a lack of nutritious food can lead to disease and impede a child's growth. But conditions linked to malnutrition can also cause cognitive delays that affect a child's ability to learn and even earn a living later in life.

When it comes to health and nutrition, early moments are critical for providing a strong foundation for a child's brain and body.

Moments begin with the health and nutrition of a pregnant woman. After birth, starting to breastfeed within the first hour and breastfeeding exclusively for the first six months provides babies with the best nutrition possible.[34] It also establishes a bond between mother and child at a critical moment, a time when the right nourishment, responsive stimulation and care can encourage healthy brain development.

After six months, solid, semi-solid and soft foods should be introduced to the diet in order to keep up with a baby's nutritional needs. From age 6 to 23 months, frequent meals a day from a variety of food groups are essential to keep up with a baby's nutritional needs.

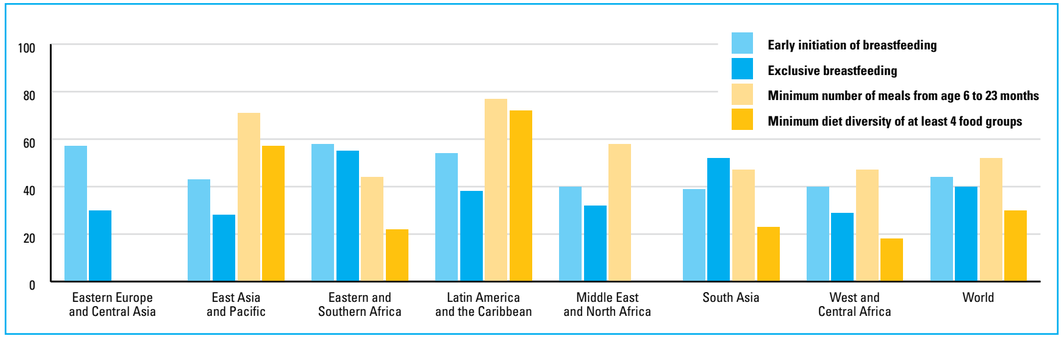
Dangers of poor nutrition

Despite wide acceptance of these guidelines, too many children do not get the nutrition they need at the time when they need it. Globally, only about 40 per cent of the world's infants under 6 months old – or two out of five – are breastfed exclusively.[35] Only half of children aged 6 to 23 months around the world are fed frequently enough and about one third are fed a minimally diverse diet, which is defined as at least four out of seven food groups.[36]

Nutritional deficiencies early in life can lead to multiple forms of malnutrition. In early childhood, malnutrition can increase the risk of infection, decrease immunity and hinder a child's ability to recover from illness.[37]

Figure 2.1. Too few children receive the right nutrition at the right time in early childhood

Percentage of children by UNICEF region who receive the right nutrition at the right time



NOTE: Data included in these global averages are the most recent for each country between 2011 and 2016. Regional estimates are presented only where adequate population coverage (>=50 per cent) is met. The minimum number of meals is two for breastfed infants 6–8 months, three for breastfed children 9–23 months and four for non-breastfed children 6–23 months of age. Minimum diet diversity is based on seven food groups: grains, roots, tubers; vitamin-A-rich fruits and vegetables; flesh foods such as meat, fish and poultry; legumes, nuts and seeds; eggs; other fruits and vegetables; and dairy products.

Source: UNICEF global databases, July 2017.

One form of malnutrition is stunting, low height for age. Stunting is a condition that globally affects 155 million children younger than age 5.[38] It is associated with cognitive deficits that impact children's ability to learn in school and earn income as an adult.[39]

Wasting – too thin for height – is also a result of disease and a lack of nutrition. Children who suffer from wasting have a weakened immunity and are at increased risk for long-term developmental delays. Nearly 52 million children under age 5 are wasted, nearly 17 million of them severely.[40]

Health issues related to nutrition can also do lifelong harm. For example, diarrhoea can harm fitness, growth and cognitive development and, as a result, impede later school performance.[41] And diseases such as hypertension, diabetes and cardiovascular and lung disease often take root in early experiences, sometimes beginning even before birth.[42]

In low- and middle-income countries, the age of 3–24 months is a time when growth falters for too many children, according to research from 2010.[43] An inadequate diet during this period increases the risk of stunting, micronutrient deficiencies, illness and death.[44] In these countries, only one in six children receives a diet with both minimum diversity and feeding frequency, let alone a diet that would help support healthy development.[45]

Healthy early childhood development is the right of every child. It starts with comprehensive support to mothers during pregnancy, childbirth and in the first months of a child's life. Support at these early stages is essential not only to help children survive, but also to help them thrive. As children grow, essential health care including immunizations, adequate nutrition and support for responsive caregiving with opportunities for early learning can build a solid foundation. It can protect them from illnesses such as diarrhoea and pneumonia in childhood and safeguard their health and well-being throughout childhood, adolescence and adulthood.

Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization

Case study: Mali

Nutrition and nurture in emergencies

In Sadia, a remote farming village in Mali, Ms. Birawe Diarré and Ms. Karjata Diarra are stars – Star Moms, that is.

The title comes from their role as volunteer parenting teachers, leaders of community childcare centres and champions for local parents who are learning new ways to provide the best start in life for their babies. Sadia is part of a region beset by food insecurity and conflict and these interventions help a community provide a buffer of support for children in an unstable and stressful environment.

“It is certainly difficult to [juggle both] household and mother-teacher activities, but we are available and willing to do it for the future of our children and those of others,” said Karjata Diarra, 26, a mother of two children and the director of one of the two community centres in Sadia.

The community centre that Ms. Diarra directs is part of an early childhood development initiative organized by UNICEF and the H&M Foundation. The goal of the programme is to integrate nurturing care interventions such as responsive stimulation and positive discipline into interventions to halt the effects of malnutrition. It uses a holistic approach that maximizes the cognitive, physical and emotional development of the child.[46]

Since 2014, the initiative has offered guidance for parents and opportunities for young children to play and learn in community and nutrition rehabilitation centres. The initiative also supplies kits for early learning activities to the centres and trains preschool teachers. In addition, it sends community counsellors and trained professionals into the homes of malnourished children to provide guidance on interacting with babies and building bonds.

In three years, the initiative has enrolled at least 25,000 children in early learning opportunities and established services in more than 400 community and nutrition rehabilitation centres.

Ms. Diarré and Ms. Diarra say they see a difference in the children who attend the early childhood community centre – they are more alert and prepared to start school. The initiative also offers an opportunity for mothers to exchange ideas and provide support to each other. And it gives malnourished children the essential developmental foundation they need to succeed in primary education and continue their personal development.

“We have seen the commitment of the whole community, as well as that of the local education authority,” Ms. Diarré said.

CHAPTER 3

Protection

No child should experience violence, abuse and neglect nor be exposed to the hazards of pollution or the upheaval caused by natural disasters. And every child should be protected in times of conflict and war.

But keeping children safe is not just a matter of protecting them from bodily harm. It is also a matter of protecting their developing brains, of creating loving and caring environments that create a protective buffer so they can survive and thrive.

The threats to children's well-being and safety mean protection is critical for healthy early childhood development. But shielding children from the dangers and stresses of the environment around them is an increasingly difficult task in a world of protracted conflicts, famines, climate-change–related disasters and pollution. Poverty is a common part of the equation, and the risks associated with it such as illness, undernutrition, poor sanitation and harsh parenting can hamper a child's development.[47]

All these dangers can lead to physical harm. However, negative experiences such as disease, neglect, stress, violence and exposure to pollution also can alter how neural connections are made in a child's brain.[48]

Pollution

Researchers also have outlined the role the environment plays in early childhood development. Contaminated water, for example, can expose children to lead and arsenic, both of which are linked to cognitive disadvantages later in life.[49]

Scientists also are examining the risk air pollution poses.[50] With smaller lungs, young children breathe faster than adults, and the micro-particles in polluted air, once inhaled, can travel through the bloodstream and break down the barriers between the blood and the brain. When this happens, the polluted air can infiltrate the brain and cause harm.[51] This area of study is new and scientists have not come to a consensus on the impact of air pollution on cognitive development. Though gaps exist, the evidence base is growing.[52]

But the effects of polluted air are becoming apparent. Studies indicate that urban outdoor air pollution is on the rise, and some projections indicate that under-five mortality could increase by 50 per cent by 2050 because of it.[53] Outdoor and indoor air pollution are linked to pneumonia and other respiratory diseases that account for almost 1 in 10 deaths of children younger than 5, making air pollution one of the leading dangers to children's health.[54]

Children who live in poverty are the most likely to face the consequences of air pollution. Indeed, up to 88 per cent of deaths from illnesses linked to outdoor air pollution and 99 per cent of illnesses linked to indoor air pollution occur in low- and middle-income countries.[55]

But air pollution is not the only danger. Every day, more than 800 children under age 5 die from diarrhoea linked to inadequate water, sanitation and hygiene. Unsafe water and sanitation are also linked to stunted growth, which can have lasting effects on children's health, cognitive development and futures.[56]

Protecting against pollution

Protecting children from pollution demands action by families, communities and nations.

Indoors it requires clean heating, cooling and cooking systems. Outdoors, it requires better waste management and ventilation systems. It involves low-carbon energy strategies and pollution controls that protect children's health and environments.

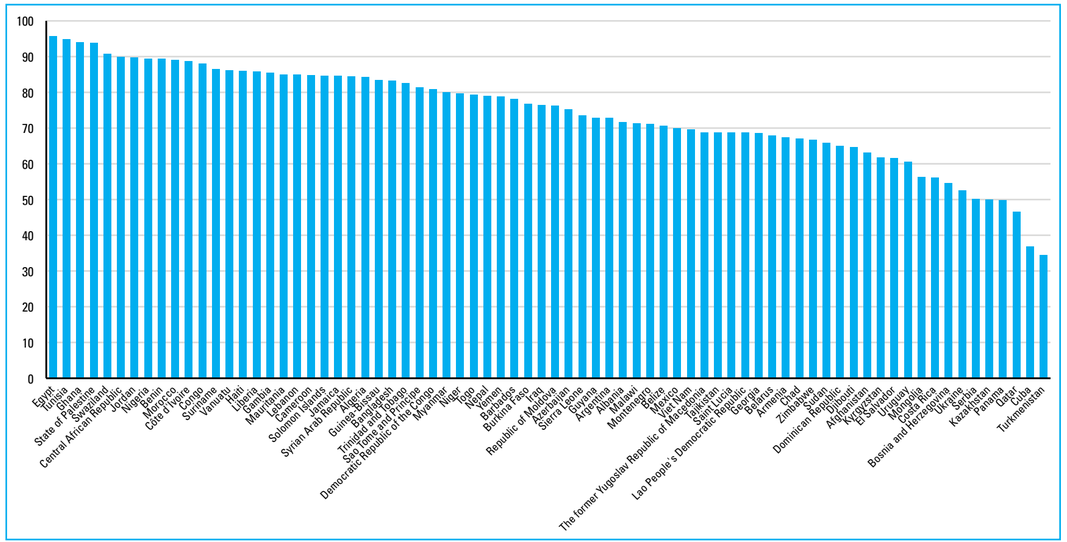
Protecting children from unsafe water and sanitation means creating safe systems, preparing systems for the dangers of climate change and protecting water sources from contamination.[57]

Toxic stress

Violence, abuse and neglect are among the most stressful experiences for a child's development. And significant evidence exists about the effects prolonged exposure to chronically high levels of stress has on early brain development.[58]

Figure 3.1: About 80 per cent of children are regularly subjected to violent discipline by their caregivers

In 74 countries with data, the percentage of children aged 2 to 4 who experienced any violent discipline including physical punishment and psychological aggression in the past month



NOTE: The weighted average is based on comparable data from 74 countries covering 28 per cent of the global population of children aged 2 to 4 years. Physical punishment includes shaking the child; hitting or slapping him/her on the hand/arm/leg; hitting him/her on the bottom or elsewhere on the body with a hard object; spanking or hitting him/her on the bottom with a bare hand; hitting or slapping him/her on the face, head or ears; and hitting him/her hard and repeatedly. Psychological aggression includes shouting, yelling or screaming at a child, and calling a child offensive names such as dumb or lazy. Violent discipline includes both any physical punishment and/or psychological aggression. Data for Belarus, Qatar and Yemen differ from the standard definition. Data for Turkmenistan should be interpreted with caution since levels are lower than expected due to some data quality issues that arose early in the fieldwork.

SOURCE: UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

The research shows that babies experience stress at multiple levels. Some stress, such as a first immunization or the introduction of a new caregiver, is considered positive. Other stress is tolerable. If it is short-lived, this kind of stress can be managed when caring adults are present to comfort and soothe.[59] However, chronic and intense stress from violence, abuse, neglect and harsh parenting practices can, without the buffer of a nurturing adult, become toxic.[60]

Toxic stress produces high levels of cortisol, a hormone that can disrupt the development of the brain's structure with effects linked to physical, mental and behavioural problems in adulthood. Specifically, toxic stress can affect the amygdala, a part of the brain involved in emotions and memory, causing it to grow too large and ultimately making it harder for a child to manage fear and anxiety.[61]

In early childhood, the kinds of stress that become toxic include physical and emotional abuse, chronic neglect and the accumulated effects of poverty. When parenting practices are harsh or insensitive, they also can present risks to a child's early development that lead to toxic stress.[62] Even when not directed at children, violence in the home can leave an imprint on a child's future. Neglect and the chronic absence of a responsive parent or caregiver also can lead to the disruption of healthy development.[63]

As the child grows into an adult, toxic stress can portend physical, mental and behavioural problems in adulthood.[64] And parents who experienced toxic stress in their own early childhoods may have a harder time providing the stable and supportive relationships needed to protect their children, perpetuating an intergenerational cycle of toxic stress.[65]

Protecting against toxic stress

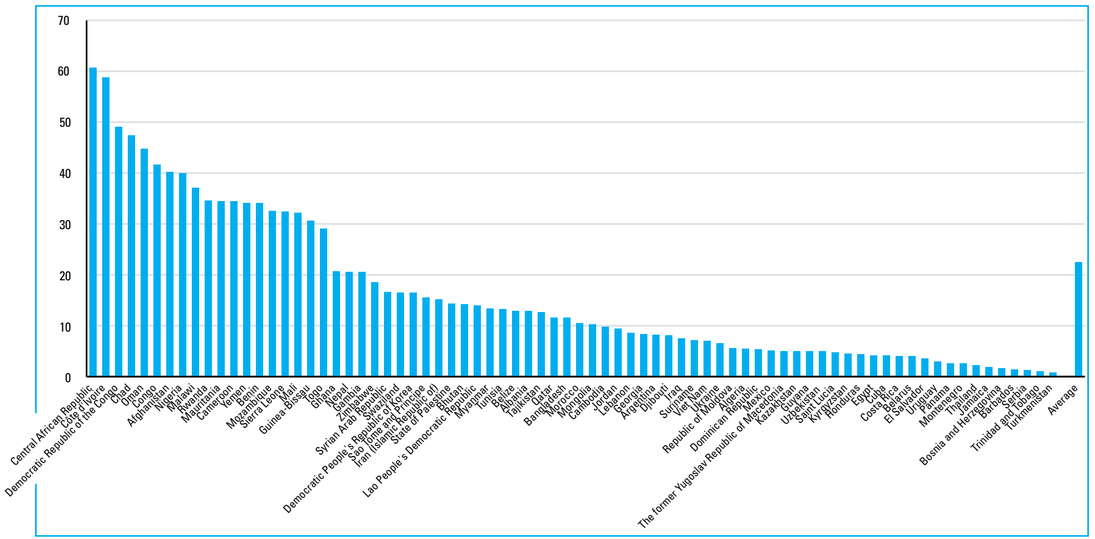
Unfortunately, far too many children will face danger in their early years. The good news is that the effects can be managed. Research shows that young children who live in supportive environments with engaged and loving parents and caregivers have a buffer that helps them cope in times of extreme stress.[66] Indeed, parents and caregivers are the first line of defence against the dangers of toxic stress. By surrounding children with attention, care and comfort, they help children manage the stress of a hazardous situation. In this caring environment, the effects of toxic stress on the brain can be mitigated.

But governments can provide critical support to families with programmes that help alleviate the stresses of poverty and provide safety, nutrition and comfort in emergency settings.

Intervening early is also essential. When the brain is rapidly developing, interventions that provide nurturing care and stability can reverse harm caused by negative experiences.[67] It can also help children build resilience.

Figure 3.2: Slightly more than one in five children under the age of five – about 45 million – experiences inadequate supervision

Percentage of children under age 5 in 76 countries left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the past week



NOTE: The weighted average is based on comparable data from 76 countries covering 30 per cent of the global population of children under age 5. Data for Georgia refer to children aged 3 to 5 years. Data for Cambodia, Democratic Republic of the Congo, Jordan, Rwanda and Togo refer to the youngest child in the household under age 5. Data for Chad and Myanmar refer to the oldest child in the household under age 5. Data for the Islamic Republic of Iran differ from the standard definition.

SOURCE: UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

Case study: Jordan

The Better Parenting Programme

For more than two decades, Jordan's Better Parenting Programme has worked to help parents and caregivers provide caring, nurturing and protective home environments for children from birth to age 8.

The programme began in 1996 in response to a survey that revealed a lack of knowledge about the importance of nurturing care, especially the role of play, in early childhood development. The programme had a special emphasis on the role of fathers in child rearing.

Since then, the programme has been implemented nationwide and it has grown into a national network that involves governmental and non-governmental partners. One of its great successes has been its efforts to combat child abuse and harsh parenting practices and to prevent toxic stress by involving religious organizations and government ministries in the efforts.[68]

The professionals involved with the Better Parenting Programme were trained in a partnership with the UNICEF Country Office in Jordan. They became integral to several countrywide systems including the Ministries of Education, Health, Social Development, and Awqaf and Islamic Affairs. These ministries run the programme and include it in their annual financial plans to ensure sustainability of the activities.

With its partners from the government, the UNICEF Country Office in Jordan developed a manual of 16 sessions that take a holistic approach to children's growth and development within the context of the family and the community. The manual also focuses on issues of children's rights including protection from abuse, gender discrimination, exploitation and conflict.

In addition, a religious manual was drafted that was extremely successful in galvanizing the role of religious officials in addressing issues of childcare and child abuse.

A 2007 evaluation of the programme showed that about 260,000 children had experienced more nurturing home environments because of the training their parents received from the programme. That figure has increased to nearly 400,000 in 2017. In addition, nearly 16,000 services providers from sectors including health, education, religion and social development were trained on the principles of nurturing care.[69]

The Better Parenting Programme has reached more than 200,000 families of different nationalities, and 90 per cent of participants attend all the sessions in the programme.[70] Parents have reported positive changes in their child-rearing approaches because of the programme.

CHAPTER 4

Stimulation

In the early moments of a child's life, parents – and caregivers – are the principle architects of a child's environment and brain development. The tools they use are the basics of engaged parenting. They include talking, playing, reading and singing. They include love.

These activities may seem small. But they have a big effect. By interacting and responding to a child, the parent is stimulating the neural connections that build a foundation for brain development – and the child's future.

Beginning as newborns, children learn about their world and how to function in it from the adults in their lives. As children grow older, their experiences with adults and other children also occur in early childhood development programmes and preschools. During this phase of a child's life, it is teachers and early childhood professionals who continue the task of building critical foundations for a child's development and learning.

In the early moments of a child's life, the stimulation that comes with love, play, talk, singing and reading books with a caring adult is not as simple as it seems. It serves an important neurological function.[71] These interactions can boost cognitive, physical, social and emotional development.[72] Brain scientists call this interaction 'serve and return'. And in these interactions between baby and adult, some of the simplest of moments can matter the most: eye contact, a hug, words, a song.[73]

Children naturally seek serve and return interactions and try to connect as they babble, gurgle or smile. When the response from an adult is unreliable or totally absent, there can be a negative impact on healthy development.[74] In addition, a lack of responsive interaction can also be linked to delayed early childhood development.[75]

The importance of responsive interactions with caring adults means that good parenting is an essential element of brain development – and of building a solid foundation for a child's future.

Play and play-based learning are also important for building the brain and the skills children need later in life.[76] For example, playing with block-like toys has been associated with higher language scores in middle- and high-income families.[77] Research also shows that children's make-believe play is linked to their development of coping and executive functions, including the ability to regulate thoughts and emotions.[78]

However, too often, children do not have materials with which to play. Indeed in the 76 countries with available data, only 15 per cent of children under age 5 have three or more children's books at home.[79]

Harsh or neglectful parenting practices can affect early childhood development for all children. But for children born into disadvantaged households, the deprivations compound.

Measuring stimulation

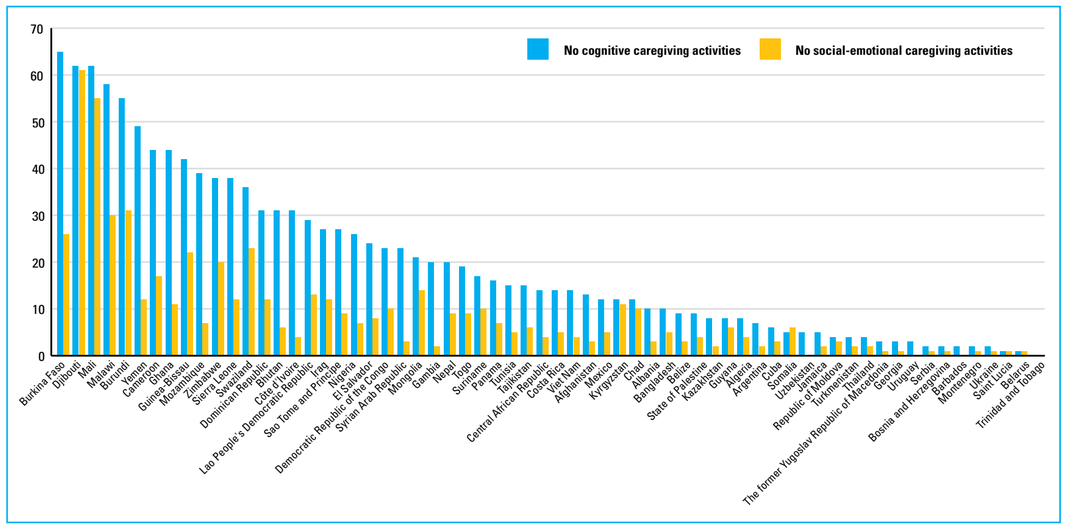
The interactions between children and the adults in their lives correspond to indicators on cognitive and social-emotional caregiving activities.[80] Cognitive caregiving activities include reading, telling stories, counting, drawing and naming the things around them.

Social-emotional caregiving activities are how children learn to connect with others through social and emotional caregiving interactions.[81] These activities include playing, singing and taking children outdoors.

Though cognitive and social-emotional caregiving activities bolster children's early development and impact their futures, the data show that millions miss out on these critical opportunities (Figures 4.1–4.3).

Figure 4.1: In 64 countries with available data, about 1 in 4 children aged 36–59 months (about 15.5 million) do not experience any cognitive or social-emotional caregiving

Percentage of children who did not experience any cognitive and any social-emotional caregiving activities from adult household members in the past three days

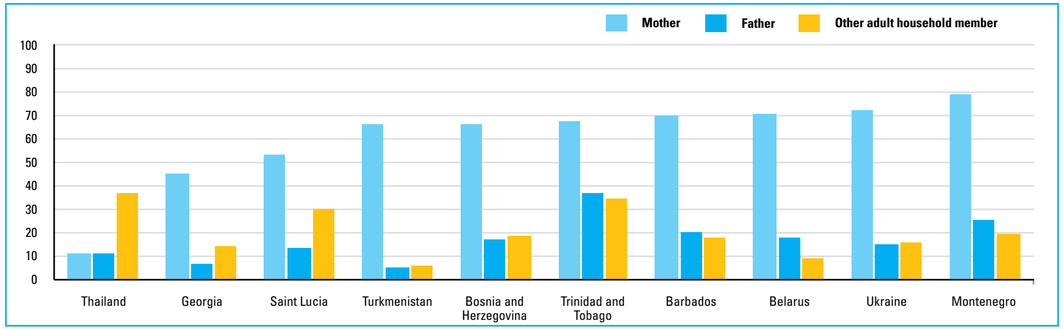


NOTE: Cognitive caregiving activities include reading books to the child, telling stories to the child and naming, counting or drawing things with the child. Social-emotional caregiving activities include singing songs to the child, taking the child outside the home and playing with the child.

SOURCE: UNICEF global databases, 2017, based on MICS, 2005-2016.

Figure 4.2. Even in countries with high levels of overall adult engagement in cognitive caregiving, it is primarily the mother who engages with the child

Percentage of children aged 36-59 months for whom an adult household member is engaged in all three cognitive caregiving activities in the past three days, by relationship to the child, in the 10 countries with the highest levels of overall engagement in cognitive caregiving activities

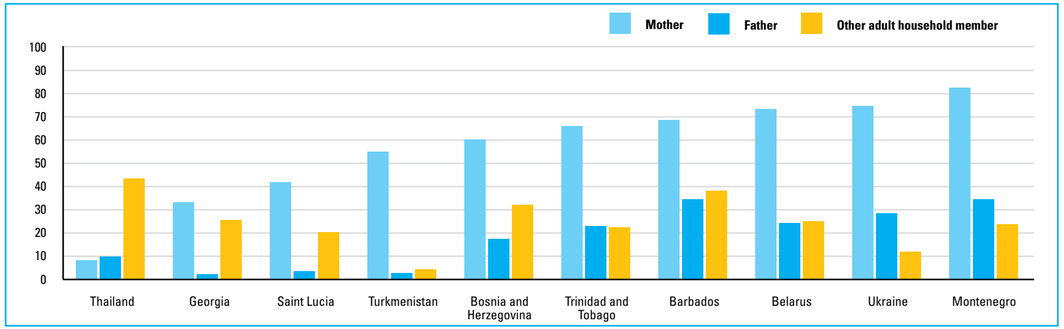


NOTE: Cognitive caregiving activities include reading books to the child, telling stories to the child and naming, counting or drawing things with the child.

SOURCE: UNICEF global databases, 2017, based on MICS, 2005-2016.

Figure 4.3. Even in countries with high levels of overall adult engagement in social-emotional caregiving, it is primarily the mother who engages with the child

Percentage of children aged 36–59 months for whom an adult household member engaged in all three social-emotional caregiving activities in the past three days, by relationship to the child, in the 10 countries with the highest levels of overall engagement in social-emotional caregiving activities



NOTE: Social-emotional caregiving activities include singing songs to the child, taking the child outside the home and playing with the child.

SOURCE: UNICEF global databases, 2017, based on MICS, 2005-2016.

Case study: Pakistan

Care for Child Development

Care for Child Development (CCD) is a landmark early childhood development intervention created by UNICEF and the World Health Organization (WHO) to reach out to the most disadvantaged children. The programme offers guidance on interactive play and communication and helps parents and caregivers engage interactively with their babies. So far, CCD has been used in at least 19 countries around the world.[82]

In Pakistan, CCD was integrated into the National Programme for Family Planning and Primary Healthcare, a primary health care intervention that focuses on reaching disadvantaged mothers and babies. In the Sindh province, community health workers known as Lady Health Workers visited primary caregivers and babies in their homes monthly and provided guidance on engaging with their babies. The Lady Health Workers demonstrated activities such as using cups as toys and helping children to stack them, and they offered feedback on ways to respond to a child's needs.

The CCD intervention also included monthly group meetings for pregnant women, female caregivers and babies.

A randomized trial to study the programme from 2009 to 2013 compared three interventions: (1) the CCD programme; (2) an enhanced nutrition programme; and (3) an integrated programme that combined CCD with the enhanced nutrition programme. All three interventions were delivered as part of the Lady Health Workers service.

The results, published in *The Lancet*, showed that the CCD interventions improved children's cognitive abilities.[83] For example:

- At age 1, the children in all the programmes had better cognitive, language, motor and social-emotional development scores than children in a control group.
- By age 2, the children in all three intervention groups had better cognitive, language and motor development than the children in the control groups.
    - Social-emotional development was similar across all groups.
    - The two groups with the CCD intervention had stronger cognitive scores than the group that experienced only the nutrition intervention.
- Two years after the intervention, the preschool-aged children who had been in the groups with CCD had more pro-social behaviours and learning skills than their peers.

"Children's first experiences with play normally occur within the home environment and with those around them. These experiences are critical in terms of the child's early development, in particular developing the brain, and laying the foundations for the child as a lifelong learner. In recent decades, the scientific community has found increasing evidence that infants and children are constantly learning, connecting and engaging with their surroundings through positive playful experiences. That is why we need to put a stake in the ground for the crucial role of play in children's positive development."

John Goodwin, CEO, the LEGO Foundation

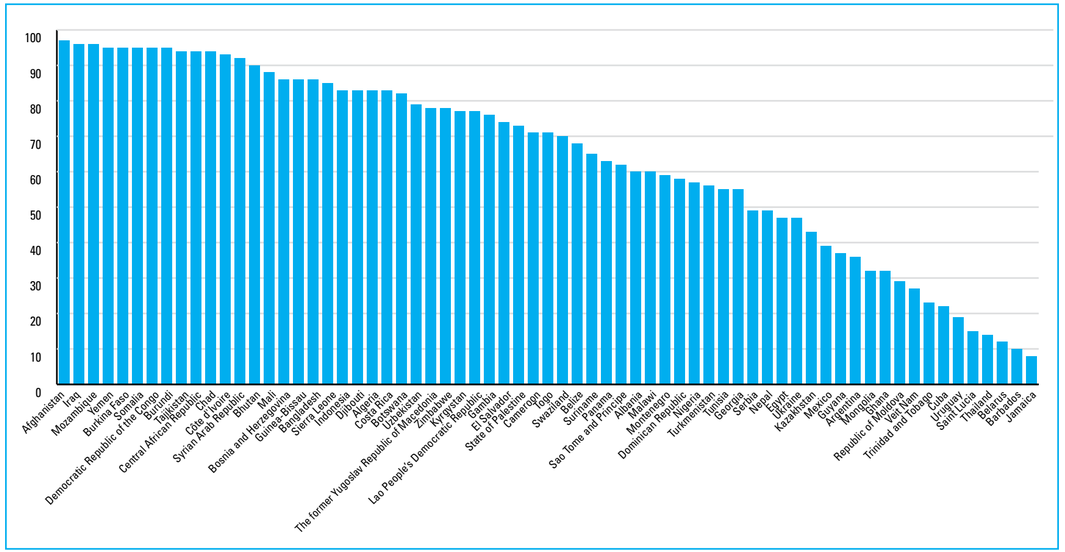
Early learning

As children grow up, teachers and childcare providers also are a source of responsive stimulation. Still, too many of the world's most deprived children miss out on these opportunities as well. In 67 countries with available data, nearly 57 million children aged 36–59 months, 69 per cent, do not attend an early childhood education programme.[84] Too few children, especially the poorest, attend preschool programmes that help foster cognitive and language development, social competency and emotional development (Figures 4.4 and 4.5). These skills are critical for success in school.

And the data show that the most disadvantaged children miss out. Even in countries where a majority of children attend early childhood education programmes, children from the poorest quintile are less likely to be able to access them (Figure 4.6).

Figure 4.4: Lack of learning opportunities

Percentage of children aged 36–59 months who do not attend early childhood education

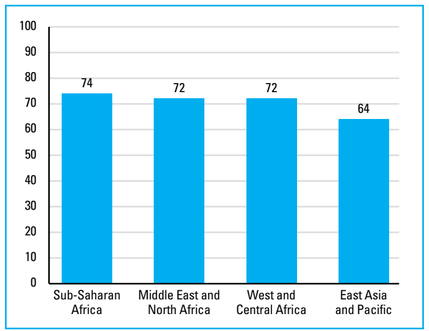


NOTE: Data for Egypt refer to children aged 3–5 years.

SOURCE: UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

Figure 4.5. Lack of learning opportunities by region

Percentage of children aged 36–59 months who do not attend a form of early childhood education programme by region

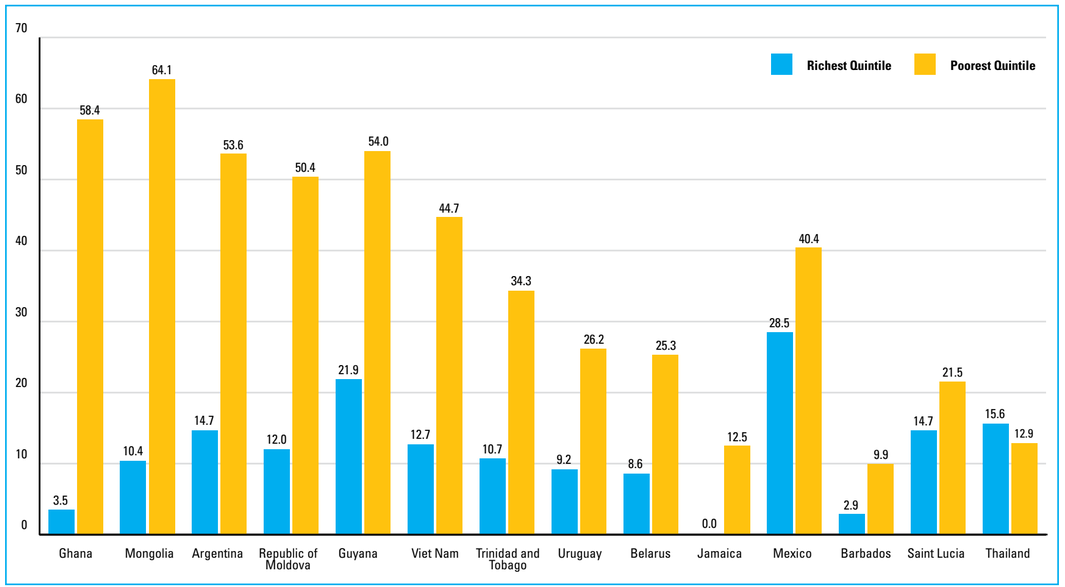


NOTE: For sub-Saharan Africa, the estimate is based on a subset of 22 countries with available data, covering 51 per cent of the regional population of children aged 36–59 months. For West and Central Africa, the estimate is based on a subset of 14 countries with available data, covering 84 per cent of the regional population of children aged 36–59 months. For Middle East and North Africa, the estimate is based on a subset of seven countries with available data, covering 63 per cent of the regional population of children aged 36–59 months. For East Asia and the Pacific, the estimate is based on a subset of five countries with available data, covering 53 per cent of the regional population of children aged 36–59 months (excluding China for which data are not available in the UNICEF global database). Since global population coverage is below 50 per cent, the total estimate (not shown) cannot be generalized to all children in the applicable age range worldwide. Data coverage was insufficient to calculate regional estimates for Eastern Europe and Central Asia, Latin America and the Caribbean, Western Europe, North America, Eastern and Southern Africa and South Asia.

SOURCE: UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

Figure 4.6. Disparities in early learning based on wealth

In selected countries where attendance is below 40 per cent, percentage of children aged 36–59 months who do not attend some form of early childhood education programme, by wealth quintiles.



NOTE: Although 22 per cent of children in Cuba do not attend early childhood education, data on wealth were not collected.

SOURCE: UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

Case study: Ethiopia

Pre-primary preparation for Grade 1

In recent years, the gross rate of children enrolled in pre-primary programmes in Ethiopia has grown from nearly 5 per cent in 2011 to 30 per cent in 2015.[85] However, enrolment has lagged in rural regions. In addition, the Government of Ethiopia has set an ambitious goal of achieving an 80 per cent gross pre-primary enrolment ratio by 2020.[86]

To address the equity concern in rural areas and to achieve the ambitious goal set by the government, a school readiness programme was conceived to provide high-quality, low-cost instruction and jump start progress. The result was the Accelerated School Readiness programme, which started in 2015 with a pilot in Benishangul-Gumuz, a developing state in the western part of Ethiopia.

The programme features 160 hours of instruction for children who are about to start Grade 1. The curriculum is based on establishing competency in personal and environmental awareness; eye-hand coordination; and early reading, writing and math preparation. Teachers use conversation cards, storytelling, rhymes, art and indoor and outdoor games to develop children's skills.

The programme is offered in the two months before the start of Grade 1 or as part of the first two months of Grade 1. The goal of the programme is to prepare children for primary school and improve their attendance and chances of academic success.

Though a full assessment is still underway, there are indications that it has already met with success. The pilot programme served 9,267 children in 208 schools, increasing pre-primary access from 28.1 per cent to 49.2 per cent in Benishangul-Gumuz. Data from a small group of students showed test score improvements of up to 11 per cent. And in focus group studies, parents and teachers indicated that the students had more confidence and were better prepared for school than children who had not participated in the programme.

CHAPTER 5

Why invest in early childhood development

Investing in children at the start of their lives is the right thing to do. And it is the smart thing to do.

The cost is affordable. For a mere US$0.50 per person, early childhood development interventions can be incorporated into existing health and nutrition services.[87] The investment can pay financial dividends in individual earnings of up to 25 per cent. For governments, the return on investment can be more than 13 per cent.

The return for children is priceless: a fair chance to grow, thrive and develop their full potential.

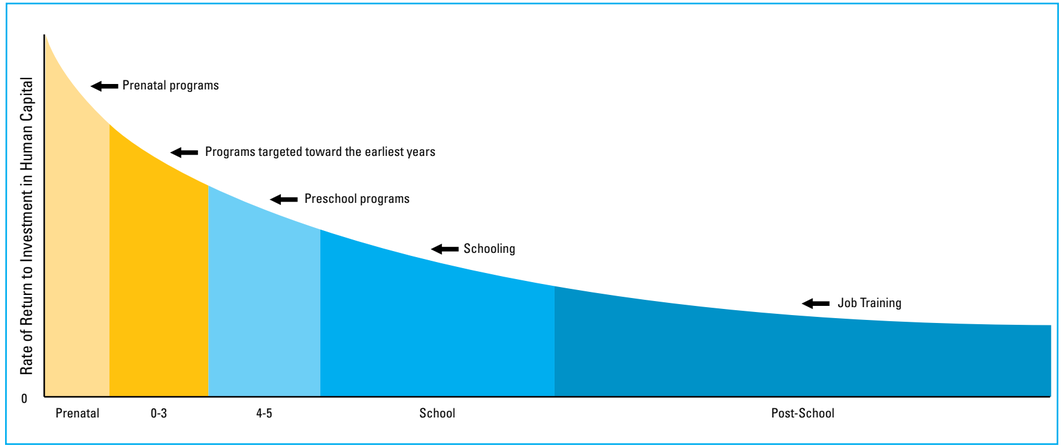
These benefits to children compound to create populations with better health and more education, and societies with less crime and better-equipped workforces.[88] Indeed, early childhood development programmes build prosperity by equipping children for the future – their future and the future of the generations that will follow.

The evidence for investing in early childhood development is also clear: It is effective and cost-effective. The annual returns on investment in early childhood development can start at about 7 per cent.[89] And the research shows that the most effective investments are those that come earliest in a child's life (Figure 5.1).

However, the returns can be even higher. A 2016 study of two high-quality childcare programmes showed that the return on investment was 13.7 per cent (see Viewpoint: *The Long-Term Benefits of Quality Early Childcare for Disadvantaged Mothers and Their Children*).[90] Though the upfront costs per child were high, US$18,514 annually, the return was US$7.30 on the dollar.[91]

The human returns on the investment were also substantial – and intergenerational. The 2016 study, conducted in the United States of America, analysed two programmes that began in the 1970s. The programmes provided free childcare for children aged 8 weeks to 5 years from low-income families. The study followed beneficiaries of the programme into their mid-30s. It asked questions about health, quality of life, criminal activity, income and level of schooling. The results showed that women who had attended the high-quality early childhood development programmes had higher secondary school completion rates by up to 25 per cent and 13 per cent better college graduation rates. Employment at age 30 was 8–13 per cent higher.[92] For men, the high-quality childcare led to a better chance of employment at age 30 of up to 19 per cent and higher incomes of up to US$24,000.[93]

Figure 5.1: The Heckman curve: The highest economic returns come from investment in a child's earliest moments.



NOTE: The X-axis is the age range for children and the y-axis is the rate of return to investment in human capital.

SOURCE: James J. Heckman, The Heckman Curve, *https://heckmanequation.org/resource/the-heckman-curve/.*

In addition to boosting children's future prospects, the high-quality childcare led to higher incomes for the mothers of the children in the programme.[94] As a result, this high-quality childcare programme was a force that could empower women to seek economic advancement.

Significant results for children have also been produced by programmes in low- and middle-income countries. In Jamaica, for example, early childhood interventions have influenced children's futures and future income.[95] In a nutrition programme, children with stunted growth were visited weekly by a community health worker who encouraged mothers and caregivers to engage and play with children. After 20 years, the stimulation and nutrition programme had a significant impact on children's cognitive development. But it also led to increased average earnings of 25 per cent in comparison with children who had not participated in the stimulation part of the intervention.[96]

"An increasingly digital economy places a huge premium on being able to reason, learn, communicate, connect and collaborate. Today, about 155 million children in the world are stunted – locking them into lives of poverty and exclusion before the age of 5. This is a global crisis that requires immediate action. Countries must prioritize investments in the early years to prevent stunting and ensure children have the cognitive and social-emotional capacities they need to succeed. The future of nations depends on it."

Jim Yong Kim, President, World Bank Group

Specific early childhood development programmes have also been shown to have a positive impact on a country's economy. For example, every US$1 invested in early childhood care and education can provide a return to the most disadvantaged children of up to US$17.[97]

Affordability

Because they are built on existing structures and systems, early childhood development interventions can be surprisingly affordable. For example, for an estimated average of US$0.50 per person annually, effective interventions for families with young children can be added to existing health and nutrition services.[98]

However, generating a figure for global investment in early childhood development is difficult. Assessment of funding for early childhood development programming is hampered by insufficient documentation, monitoring and management.[99]

A study of 73 countries with a high burden of children at risk of falling behind in early childhood indicated that US$34 billion in the next 15 years would be the amount needed to incorporate comprehensive early childhood development interventions into health and nutrition services.[100]

A broad sense of the investment required can be gleaned from an examination of the funding expected for early learning. The Sustainable Development Goals (SDGs) have called for governments to provide free, universal pre-primary education. Currently, government and donor spending on pre-primary education is estimated at just over US$11 billion. Between now and 2030, the cost to roll out universal and free pre-primary education in low- and lower-middle-income countries is estimated at US$44 billion per year.[101]

Another sense of the cost of scaling up early childhood interventions might be linked to the cost of increasing the number of community health workers, an integral part of the delivery system for early childhood services. In sub-Saharan Africa alone, the cost to provide 1 million community health workers is estimated at US$3.1 billion per year.[102]

In nutrition, the 10-year funding gap for meeting global targets on stunting, breastfeeding, severe acute malnutrition and anaemia is US$70 billion. To reach these goals, governments and donors will need to increase their annual investments. Governments will need to spend US$3.7 billion more every year and donors, US$2.6 billion.[103]

Benefits of investment

In an increasingly global and interconnected economy, the skills required to succeed in the workforce are evolving rapidly. Automation, mechanization and the accelerating pace of technological advancement lead to less employment for low-skilled and unskilled workers. As a result, most workers must master skills once needed only by elite members of a community.[104] To be able to acquire these skills and find jobs as adults, children need a strong foundation built early in life.

Investments are particularly urgent as changing demographic trends make it essential to equip a workforce capable of keeping up with rapidly evolving technical demands. In some countries, ageing populations are followed by smaller generations – and smaller workforces to support them. In other parts of the world – especially in low-income countries where early childhood development services and education lag – there is a youth bulge.

In Africa, for example, the percentage of the population younger than 5 is expected to swell by 51 per cent from 2015 to 2050.[105] In 2050, more than 40 per cent of the children in the world will live in Africa. This population growth offers an economic opportunity, a demographic dividend, for many countries in Africa. But reaping the benefits of a demographic dividend can be accomplished only by nurturing a skilled and knowledgeable workforce.[106]

Box 5.1. Comparative investment

In countries that are part of the Organisation for Economic Co-operation and Development (countries with advanced or emerging economies), public expenditure on early childhood education and care averages about 0.7 per cent of GDP.* But the figures vary. In Iceland, public spending is about 1.8 per cent of GDP and it is less than 0.5 per cent in Estonia, Japan, Portugal, Turkey and the United States.

Disparities exist between spending levels in different economic classifications for countries. In high-income countries, for example, spending on education as a percentage of GDP is 4.9. However, in low-income countries, the percentage is 4.1. Of that lower percentage, low-income countries spend 2.9 per cent of their education budgets on pre-primary education. However, high-income countries spend 9 per cent.

Source: OECD Family Database 2016, <https://www.oecd.org/els/soc/PF3_1_Public_spending_on_childcare_and_early_education.pdf>, accessed 16 July 2017.

*Asma Zubairi and Pauline Rose, *Bright and Early: How financing pre-primary education gives everyone a fair start in life – Moving towards quality early childhood development for all*, Theirworld, London, 2016, p. 22.

Box 5.2 Nepal: A demographic window of opportunity

Since at least 1980, Nepal has been home to a young population. However, starting in 2015, the age of the population has begun to shift. Rapidly, Nepal is expected to transition into an ageing society by 2028 and an aged society by 2054. Currently, Nepal has a window of opportunity to take advantage of its demographic dividend. But the country also needs to be prepared for a new demographic reality, one with fewer working adults and more dependents.

Creating a productive workforce begins by investing in human capital starting in early childhood. In 2009–2010, Nepal started a social protection programme called the Child Grant. It was provided to children under 5 in the Karnali region of the country and to families of the Dalit ethnic group. Early evidence about the programme indicates that it has led to substantial increases in birth registration and has allowed beneficiaries to purchase food, clothing and other basics. In the period 2016–2017, the Government of Nepal committed to expanding the programme to reach all children younger than 5.

Source: Government of Nepal National Planning Commission and the United Nations Children's Fund, *Demographic Changes of Nepal: Trends and Policy Implications*, Government of Nepal and UNICEF, Kathmandu, March 2017.

Lack of investment

Despite the benefits for children and nations, there is little investment in early childhood interventions. There is also no comprehensive system for tracking how much money is spent on early childhood development programmes, where the money comes from or how it is invested. In low- and middle-income countries, information is particularly scarce.[107]

The funding figures that are available show the lack of investment in children's earliest years. In nutrition, low- and middle-income countries spend an estimated US$2.9 billion annually on interventions to tackle risks in early childhood including stunting and wasting, and to support exclusive breastfeeding. This investment is a mere 1 per cent of the money these countries spend on health in general. Donors provide about US$1 billion to support these efforts.[108]

In education, government spending on pre-primary education is low in comparison to the funding allocated to other levels of education. In low-income countries, spending on pre-primary education is under US$8 a year, or about two cents per child a day. That amount is about 2.9 per cent of the total spent on education, though internationally recognized recommendations are 10 per cent.[109]

The task of tracking investment in early childhood interventions is a significant challenge. These interventions cross sectoral boundaries and evaluation methods. And the money spent on early childhood development comes from multiple sources – governments, international donors, local non-governmental organizations, communities and families. Indeed, in countries around the world, families often pick up the bill for early childhood development interventions such as childcare and private preschool.[110]

Case study: China

Reaching parents with an online portal to information

In remote rural regions of China, a growing number of families have nearby access to essential information on parenting.

Thanks to an online parenting portal, families can find answers to essential early childhood development topics including daily care, nutrition, feeding, disease prevention, immunization and early learning. The portal is available for families with Internet access and in local kindergartens and community centres throughout the country. It also can be downloaded as a mobile application.

For Zhang Qi, a volunteer at an early childhood development centre in the Xigao village of Baoding, Hebei Province, the portal helps her guide parents with tips about the importance of nutrition, protection, play and love.

“When I can’t really explain or answer the questions, I will use the portal to explain,” Zhang Qi, 23, said. “Sometimes, I notice caregivers are all concerned about a particular issue, and I will organize a group of them to watch the portal together, and then discuss the issue with them.”

China’s Ministry of Education and UNICEF launched the parenting portal online in 2012 to reach out to disadvantaged communities. An offline version was set up in ‘kiosks’ in kindergartens, and community centres followed in 2013. A mobile application was launched in 2014. By that year, the online portal had reached nearly 400,000 individuals.

The parenting portal is part of a broader effort by the Government of China to promote early childhood development and, in particular, to provide guidance to parents, grandparents and caregivers about the responsive stimulation that comes from play, talk, singing, reading and cuddling.

Though the parenting portal provides information, it is supported by services in disadvantaged regions in rural western China. In partnership with UNICEF, the Government of China has focused on piloting responsive stimulation programmes and has integrated them into community-based health clinics for children from birth to age 3.

When the Government of China and its partners launched these programmes in 2012, there were few stimulation-based interventions for young children. Since then, many new projects for children from birth to age 3 have been initiated and the results have been measurable. Evaluation models have shown – with comprehensive support that includes health, nutrition, responsive stimulation and programmes such as the health portal – a reduction in the percentage of children from birth to age 3 with suspected developmental delays from nearly 37 per cent in 2012 to nearly 19 per cent 2016. A recent review of the programmes showed:

- 93 per cent of caregivers increased communication about child rearing within the family;
- 91 per cent of caregivers feel happier since the project started;
- 90 per cent of caregivers increased the amount of time spent with their children.

Zhang Qi finds the portal useful not only as a volunteer, but also as a mother of a one-year-old daughter, she said.

“I see even more how useful it is for parents and grandparents,” Zhang Qi said. “Now I can look into other caregivers’ eyes and try to read and understand them.”

VIEWPOINT

The Long-Term Benefits of Quality Early Childcare for Disadvantaged Mothers and Their Children

BY JORGE LUIS GARCÍA AND JAMES J. HECKMAN (UNIVERSITY OF CHICAGO), DUNCAN ERMINI LEAF, MARÍA JOSÉ PRADOS (UNIVERSITY OF SOUTHERN CALIFORNIA)

Using data from a randomized control trial, we evaluated the lifetime effectiveness of a widely emulated, high-quality early childhood programme: the Carolina Abecedarian Project and Carolina Approach to Responsive Education (ABC/CARE). The programme targets young children from disadvantaged families and provides full-day childcare that frees mothers to work or go to school. In the programme, children receive intensive, high-quality centre-based care from age 8 weeks until age 5. The children in the programme were compared with a control group of children who were denied access to the ABC/CARE programme. A substantial fraction of them received alternative childcare.

The ABC/CARE programme promotes adult health, educational attainment, earnings, employment and civic participation of participants. It reduces adult crime. The programme has a two-generation impact. There are substantial benefits for the mothers of the participants by allowing them to increase their labour income, work experience and education. This improves the family lives of disadvantaged children. The financial benefits that come from enhanced maternal income accrue early once a child starts the programme, which tends to offset the costs of the programme early on compared to other benefit sources that accrue later in life.

The overall rate of return is 13.7 per cent per year. Every dollar invested repays US$7 over the life of the project. The programme promotes the social mobility and economic and social welfare of both parents and children. These estimates account for the distortionary costs of raising taxes to finance the programmes. There are greater monetized benefits for boys than for girls, primarily because of the reduction of violent crime for boys and greater male improvements in health.

About 75 per cent of the children who were not in the ABC/CARE programme were placed in low-quality centre-based childcare, which generates much smaller lifetime benefits, and even causes harm. Boys are especially vulnerable to being placed in low-quality childcare centres compared to remaining at home.

As this research shows: Quality matters.

Source: Jorge Luis García, James J. Heckman, Duncan Ermini Leaf, and María José Prados, 'The Life-cycle Benefits of an Influential Early Childhood Program', Human Capital and Economic Opportunity Global Working Group, Working Paper 2016–035, Chicago, December 2016.

CHAPTER 6

Policies, programmes and partnerships

In a world of persistent perils, children do not always grow up in the loving and enriching environments they need for healthy development. Many need support.

To be effective, this support needs to include nutrition, protection and stimulation. It needs to be delivered through existing services in education, health, social protection, water, sanitation and hygiene, and other sectors. It needs to be tailored for children and their parents and caregivers. And it needs family-friendly policies so parents can provide the best start in life for their children.

But comprehensive support for families and children cannot be achieved in isolation; it requires champions in government and the commitment of partners, families and communities.

For generations, early childhood development programmes focused on pre-primary education – teaching children the ABCs and preparing them for the classroom. Certainly, preschool is a critical part of early childhood development and it is essential for helping children start school at the right age and preparing them to learn.

But new discoveries about early brain development have made it clear: Preschool is not enough. To provide every child with a solid foundation for life, it is essential to start

early – before birth. And it is essential to make sure that all children, especially the world's most disadvantaged, have the health, nutrition, protection, care and education they need to grow, learn and thrive.

Of course, many programmes implemented in the past decades have improved the lives of young children. Since 1990, programmes in health and survival have helped reduce the under-five mortality rate by 53 per cent.[111] Since 2000, fewer children younger than 5 have died because of treatable diseases including pneumonia, diarrhoea and malaria.[112] The number of people, many children, living in extreme poverty decreased by nearly half from the 1990s to 2012.[113] More children attend pre-primary education than before. But investment and scale-up have been minimal, leaving more than 200 million children out of pre-primary education.[114]

Programmes

Though successful, these programmes have not always addressed early childhood development or measured results by the development of a child's cognitive, language, motor, social and emotional skills.[115]

Based on experience and data from countries around the world, investment is required in effective early childhood development programmes for children and families. These programmes have common characteristics.[116] They all:

- Take into account a child's age;
- Provide services tailored to the needs of not only children, but also parents and caregivers in a contextually relevant manner;
- Cross development divides and involve multiple sectors including health, nutrition, protection, education, poverty reduction, and water, sanitation and hygiene.

Countries around the world have experienced success with early childhood development interventions. In Chile, the government integrated an early childhood development programme, Crece Contigo (Chile Grows with You), into the country's public health system (see Viewpoint: Chile Grows with Early Childhood Development). The programme has reached 1.6 million children,[117] and in 2017, Chile was poised to expand it to include children up to age 9.[118] Uganda also has recognized the importance of early childhood development to the country's future. In 2016, the government adopted an integrated plan that involves sectors including health, nutrition, environment and education.[119]

In Pakistan, for example, a successful intervention for children from birth to about age 3 has involved community health workers and doctors who work within the health and nutrition sectors to provide immunization for children or breastfeeding support for mothers (see Pakistan case study).

Effective programming also spans the traditional divide between development interventions and humanitarian relief responses.[120] In Mali, for example, a combination of stimulation and nutrition interventions were provided to children throughout the country, including in regions where children were caught in humanitarian crises and conflict (see Mali case study).

As children grow up, early learning interventions for children involve teachers or caseworkers from the education and child protection sectors. These learning interventions could involve quality childcare centres or be integrated with services that protect children from abuse or neglect. In Rwanda, for example, early learning interventions have been integrated with service systems that support children and families in the health, nutrition, education, water, sanitation and protection sectors (see Rwanda case study). And in Ethiopia, preschool interventions have been successful at preparing children to learn in Grade 1 (see Ethiopia case study).

Programmes that reach out to children and parents also need to occur in contexts such as health care facilities, childcare centres, preschools and homes. In Serbia, a nursing care programme for newborns reaches families with visits to their homes (see Serbia case study). In China, families are reached in their homes and in community centres with online services (see China case study).

Policies

Reaching children is only a part of the solution. Family-friendly policies and programmes that support parents

"A nation's development trajectory can be set in just the first decade of its children's lives. While school-age children are now a widely accepted critical focus for national governments and the international community, the evidence is compelling that early childhood deserves equal attention. Quality of care, nutrition and learning in a child's early years – and the skills that parents learn – have a powerful influence on not just readiness for school, but livelihoods and well-being later in life. It is time for a surge of further research and programming on early childhood development."

H. E. Reem Al Hashimy, Minister of State for International Cooperation in the Cabinet of the United Arab Emirates and Chairperson of Dubai Cares

and caregivers are also essential.[121] These policies can include:

- Public, tuition-free pre-primary education provided for two years;
- At least six months of paid breastfeeding breaks at work;
- 12 months of paid parental leave after the birth a baby.

However, few countries provide these policy protections for parents and families. Based on an analysis of countries with available data, only 15 countries have three basic national policies that help guarantee parents and caregivers the time and resources they need: 1. two years of tuition-free pre-primary education; 2. six months of paid breastfeeding breaks; 3. and six months of paid maternity and four weeks of paid paternity leave. These countries include Cuba, France, Portugal, the Russian Federation and Sweden. Conversely, 85 million children younger than 5 are not covered by any of these policies. Two countries are home to 40 per cent of these children: Bangladesh and the United States of America.[122]

Policies are also needed for income support measures such as higher minimum wages. Cash transfers – providing families directly with funds to pay for necessities or other essential services – are an effective way to help support families so they can look out for their children's health and well-being.[124] Studies in Colombia, Nicaragua and Mexico have shown that cash transfer systems helped families improve early childhood development and sometimes counteract early adverse effects of extreme weather emergencies.[125]

Box 6.1. Innovative financing[123]

In recent years, many low- and middle-income countries have begun to experiment with innovative approaches to financing early childhood development. These efforts include earmarking and dedicating funds from tax revenue. Colombia, for example, has established a national payroll tax that supports a range of early childhood development services – childcare, pre-primary education, health and parental education. In the Philippines, the authorities have instituted a tax on gambling that helps fund integrated services for children from birth to 4 years old.

Other innovations have focused on the quality of services, such as 'payment by results' schemes. In this approach, private providers of public services are funded based on the results they achieve. This encourages better performance and helps governments address a lack of upfront capital and the excessive risks that discourage private investment in early childhood development.

Payment by results programmes (also called 'social impact bonds') have been successful in South Africa and India. In Peru, a results-based financing model for childcare and home visitation services was based on instruments including monitoring based on performance, independent evaluations and management incentives. Chile has made early childhood development a top national priority, creating an integrated results-based platform (Chile Cresce Contigo). The platform delivers targeted early childhood development interventions, especially for disadvantaged children.

Partnerships

In addition to policies and programmes, partnerships are essential – partnerships with families, governments and the international community.

Family members, caregivers and services providers are potentially the most powerful advocates for better early childhood development programmes and policies. Large-scale advocacy and communication for development (C4D) efforts are underway. In Uganda, for example, a comprehensive awareness campaign was launched in 2016 to change the behaviour of parents and caregivers, mobilize resources and improve perceptions about the importance of early childhood development, especially in disadvantaged areas of the country. The focus is on parents and caregivers, but the campaign has also engaged government representatives, media, and faith-based, civil society and development organizations.

In Benin, awareness-raising efforts have involved community leaders and local authorities in community preschools. They have also included radio broadcasts that tout the benefits of early learning. These efforts, part of a partnership with the H&M Foundation, have underscored the value of preschool in the eyes of parents and caregivers and helped drive greater enrolment in community-based preschools.[126]

Parents and caregivers are critical advocates for early childhood development. However, the task also requires champions in government and the international development community – partners who are convinced by the neuroscience, persuaded by the investment case, and committed to the moral imperative to reach every child, especially the most disadvantaged.

Already, partners around the world are joining together to encourage investment and engagement in early childhood development. In 2016, UNICEF and the World Bank established a network to encourage global advocacy for greater investment in early childhood development. Recently, many partners formed the Early Childhood Development Action Network (ECDAN).

Box 6.2. #EarlyMomentsMatter

UNICEF's work in early childhood development is fuelled by the goal that all children, especially the most vulnerable, achieve their developmental potential, including in humanitarian settings.

A key part of this effort is a communication and advocacy campaign that aims to reach parents, policymakers and businesses.

The campaign, #EarlyMomentsMatter, was launched in January 2017. The goal is to increase understanding, commitment and investment globally about the importance of healthy brain development in the earliest years of life.

The main message of the campaign is simple: nutrition, protection and stimulation – eat, play love – are the essential elements of a child's early brain development.

ECDAN's priority is to assist countries in their efforts to provide high-quality, equitable services that support parents and other caregivers of young children, especially from birth to age 5. Specifically, ECDAN's goals are to:

- Support the coordination of early childhood development activities locally, regionally and globally;
- Share knowledge, technical tools, resources, advocacy materials and other assets;
- Increase demand for services for young children and their families through expanded and coordinated advocacy initiatives.

Case study: Rwanda

Policies, programmes and partnerships

In recent years, the Government of Rwanda has acknowledged the importance of nurturing care and early childhood development by enacting strong policies and strategies.[127]

As part of the UNICEF and H&M Foundation partnership, an ECD & Family Model was established for creating centres that provide access to services that support children and families including health, nutrition, education, water, sanitation and child and social protection.[128]

Working closely with multiple government ministries, the partnership first established and equipped nine centres with early childhood development kits, playground equipment, child-friendly furniture and toys such as books, dolls and plastic utensils. All toys were locally produced, age-appropriate and culturally acceptable. The centres recruited caregivers and managers from the communities to encourage ownership and sustainability. Each was trained using the Ministry of Education's approved preschool curriculum. In addition, many of the centres established parent committees.

The ECD & Family Model uses a hub-and-spoke approach to deliver services to children and their families. The centre-based services are supplemented by home-based early childhood development services for children aged 37 to 72 months who live far from the model centres, and home visitation services for children aged 0 to 36 months. Both use the Care for Child Development materials adapted and translated to suit the local culture and language.

The centres, so far, have benefited more than 130,000 children in Rwanda. But as the ECD & Family Model is replicated throughout the country, more of the country's most disadvantaged children stand to benefit from this comprehensive and family-focused approach.

Programmes for children, families and futures

Optimal health, nutrition, protection, responsive care and early learning at the right time are all necessary for children to grow, learn and thrive.

Conception to birth

For children:
nutrition, health care

For parents and caregivers:
nutrition, health care

+

Birth to age 3

For children:
immunization, health care, nutrition, child protection, responsive stimulation

For parents and caregivers:
breastfeeding counselling, health care, social protection, child protection, parenting guidance

+

Preschool

For children:
early learning opportunities, interaction with adults and peers, good hygiene practices, health care

For parents and caregivers:
parenting guidance, support and social protection

=

A child prepared to learn and thrive

VIEWPOINT

Chile Grows with Early Childhood Development

BY PRESIDENT MICHELLE BACHELET OF CHILE

Countries aspiring to achieve sustainable development may wish to further increase their efforts to promote greater investment in the development of the child during his or her first years of life. Evidence has clearly shown that investing in early childhood leads to greater returns in terms of human and social capital.

In fact, it is widely known that the human brain develops faster in the first years of life than at any other period of time. During this period, critical development processes influence the child's ability to learn and to face the world. It is a window of time that cannot be missed.

This conviction has led me to prioritize early childhood development during my two terms as President of Chile, as it is our hope that all children in Chile reach their maximum potential, regardless of their socio-economic status or place of birth.

Chile Crece Contigo (Chile Grows with You) was designed and implemented during my first administration, 2006–2009. It aimed to protect children from gestation to the age of 4 in an integrated manner and to generate equal development opportunities for all. At its 10-year anniversary, *Chile Crece Contigo* has reached more than 1.6 million children.

Chile Crece Contigo was developed based on the country's solid public health network that covers some 80 per cent of the children from birth to 4 years old. In its implementation, we have strengthened and complemented existing services and generated new ones. Thanks to these efforts, 42 per cent of children with developmental delays have overcome their challenges.

It is with great pride that we are currently working towards expanding the coverage of *Chile Crece Contigo* to reach children up to age 9. However, we remain aware of the challenges we face in relation to strengthening coordination, monitoring and evaluation mechanisms. We are also looking into ways to provide greater support to parents and caregivers, so that they are equipped to care for their children in a manner that is nurturing and sensitive to the needs of children.

A study undertaken by UNICEF showed that Chile has significantly increased its investment in children below the age of 10, reaching 3.66 per cent of its GDP in 2015. This is partly due to *Chile Crece Contigo*. But also it is the result of the efforts made to increase preschool education in the last 10 years.

Today, we are at a historic moment in time. For the very first time, the youngest children have been explicitly included in the global development agenda as part of the Sustainable Development Goals. It is important that all countries continue to advance the early development of their children – not only as an imperative for development, but also for social justice and equity.

Source: United Nations Children's Fund, Inversión Pública en Primera Infancia en Chile: Diagnóstico, desafíos y propuestas – Estudio principales resultados, UNICEF, Santiago, 2016, <http://unicef.cl/web/wp-content/uploads/2016/12/Inversio--n-publica-WEB.pdf>; Departamento de Estadísticas e Información en Salud DEIS-MINSAL, 2016.

CHAPTER 7

Conclusion

Providing a solid start in life for every child is increasingly urgent in a fractured world where many millions of children spend their formative early years in emergency settings.[129] It is urgent in a world where children grow up in extreme poverty and in households where they are subjected to physical discipline, abuse, exploitation and neglect.[130]

The Sustainable Development Goals (SDGs) present an opportunity to connect early childhood development with efforts to create equity, productivity, prosperity and sustainable growth for a more peaceful future. Embedded in the SDGs on hunger, health, education and justice are targets on malnutrition, child mortality, early learning and violence – targets that outline an agenda for early childhood development.[131]

However, these targets need to become top-tier priorities. And governments, international organizations, scientists, researchers, businesses and communities must join in a common effort to help build a solid foundation for every child.

The good news is that attitudes, policies and practices can change. When families, communities, governments and partners join in coordinated efforts, children have the opportunity to develop to their full potential. And nations benefit with healthier populations, skilled workforces, economic growth and greater prosperity.

The stakes are high. Success – and failure – will imprint on the brains and early development of our children and our world.

Now it is more urgent than ever that we work together in a unified network of advocacy and action. Independently, each partner can make a unique contribution. But together we have the opportunity to reach disadvantaged children around the world with the care, nutrition, health and learning opportunities they need for a healthy and fulfilling future.

Peter Laugharn, CEO, Hilton Foundation

Box 7.1. Early childhood development, sustainable development[132]

When governments adopted the Sustainable Development Goals (SDGs) in 2015, they made a series of promises to their citizens and the world. Among these commitments are four that focus on early childhood development: Goal 2 on hunger; Goal 3 on health; Goal 4 on education; and Goal 16 on peace and justice. Embedded within each of these goals are specific targets that directly address the essentials of early childhood development:

- **Target 2 of Goal 2** on ending hunger focuses on malnutrition in children younger than 5 and requires measurements of stunting and wasting.
- **Target 2 of Goal 3** requires global leaders to track progress in health by measuring neonatal, infant and under-five mortality rates.
- **Target 2 of Goal 4** requires governments to begin education with early learning and development opportunities and measure progress by the number of children who receive at least a year of pre-primary education.
- **Target 2 of Goal 16** calls for an end to abuse, exploitation, trafficking and violence against children.

Early Moments Matter for every child

So UNICEF calls on governments and partners to:

1. Invest urgently in services that give young children, especially the most deprived, the best start in life.
2. Expand access to effective and essential early childhood development services in homes, schools, communities and health clinics.
3. Make family-friendly early childhood development policies a national priority – and a private sector imperative.
4. Collect data on essential indicators of early childhood development and track progress in reaching the most deprived.
5. Provide dedicated leadership for early childhood development programmes and coordinate efforts more effectively across sectors.
6. Drive demand for high-quality early childhood development services.

For more details, please see page 5.

Endnotes

1. Gertler, Paul, et al., 'Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica', *Science*, vol. 344, no. 6187, 30 May 2014, pp. 998-1001, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574862>.
2. United Nations Children's Fund, World Health Organization and the World Bank Group, *Levels and Trends in Child Malnutrition: Joint child malnutrition estimates – Key findings of the 2017 edition*, New York, Geneva, Washington, DC, March 2017, <http://data.unicef.org/wp-content/uploads/2017/05/JME-2017-brochure-1.pdf>.
3. UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.
4. United Nations Children's Fund, *Clear the Air for Children*, UNICEF, New York, October 2016, p. 8, <https://www.unicef.org/publications/files/UNICEF_Clear_the_Air_for_Children_30_Oct_2016.pdf>.
5. Jack P. Shonkoff, M.D., Director of the Center on the Developing Child at Harvard University.
6. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e232.full.pdf>.
7. Britto, Pia R., et al., 'Nurturing Care: Promoting early childhood development', *The Lancet*, vol. 389, no. 10064, January 2017, pp. 91–102, <www.sciencedirect.com/science/article/pii/S0140673616313903>.
8. Gertler, Paul, et al., 'Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica', *Science*, vol. 344, no. 6187, 30 May 2014, pp. 998–1001, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574862>.
9. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e232.full.pdf>.
10. Black, Maureen M., et al., 'Early Childhood Development Coming of Age: Science through the life course', *The Lancet*, series 0140-6736, no. 16, 4 October 2016, p. 4, <www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31389-7.pdf>.
11. United Nations Children's Fund, World Health Organization and the World Bank Group, *Levels and Trends in Child Malnutrition: Joint child malnutrition estimates – Key findings of the 2017 edition*, New York, Geneva, Washington, DC, March 2017, <http://data.unicef.org/wp-content/uploads/2017/05/JME-2017-brochure-1.pdf>.
12. UNICEF global databases, 2017, based on Multiple Indicator Cluster Surveys (MICS), 2005–2016.
13. García, Jorge Luis, et al., 'The Life-cycle Benefits of an Influential Early Childhood Program', Human Capital and Economic Opportunity Global Working Group, Working Paper 2016-035, Chicago, December 2016, p. 1, <https://heckmanequation.org/resource/lifecycle-benefits-influential-early-childhood-program>, accessed 22 April 2017.
14. Ibid.
15. Gertler, Paul, et al., 'Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica', *Science*, vol. 344, no. 6187, 30 May 2014, pp. 998–1001, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574862>.
16. Richter, Linda M., et al., 'Investing in the Foundation of Sustainable Development: Pathways to scale up for early childhood development', *The Lancet*, series 0140-6736, vol. 16, 4 October 2016, pp. 108–109, <http://thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31698-1.pdf>.
17. You, Danzhen, et al., 'Global, Regional, and National Levels and Trends in Under-5 Mortality between 1990 and 2015, with Scenario-Based Projections to 2030: A systematic analysis by the UN Inter-agency Group for Child Mortality Estimation', *The Lancet*, vol. 386, no. 10010, 5 December 2015, pp. 2275–2286, <www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00120-8/fulltext>.
18. Resolution adopted by the United Nations General Assembly, 'Transforming Our World: The 2030 Agenda for Sustainable Development', A/RES/70/1, 25 September 2015, <www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E>.
19. Zubairi, Asma, and Pauline Rose, *Bright and Early: How financing pre-primary education gives everyone a fair start in life – Moving towards quality early childhood development for all*, Theirworld, London, 2016, p. 6, <http://theirworld.org/resources/detail/bright-and-early-report-on-financing-pre-primary-education>.
20. Tanner, Jeffery C., Tara Candland and Whitney S. Odden, 'Later Impacts of Early Childhood Interventions: A systematic review', Independent Evaluation Group Working Paper 2015/3, World Bank Group, Washington, DC, 2015, pp. 38–41, <http://documents.worldbank.org/curated/en/646221468186256866/pdf/95984-REVISED-WP-PUBLIC-ADD-ISBN-Box394829B.pdf>.
21. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e232.full.pdf>.
22. Center on the Developing Child, Harvard University, 'Key Concepts: Brain architecture', <http://developingchild.harvard.edu/science/key-concepts/brain-architecture>, accessed 30 July 2017.
23. Ibid.
24. Center on the Developing Child, Harvard University, 'In Brief: The science of early childhood development', <http://developingchild.harvard.edu/resources/inbrief-science-of-ecd>, accessed 1 June 2017.
25. Ibid.
26. Ibid.
27. Center on the Developing Child, Harvard University, 'Key Concepts: Brain architecture', <http://developingchild.harvard.edu/science/key-concepts/brain-architecture>, accessed 29 December 2016.
28. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/early/2011/12/21/peds.2011-2663>.
29. Ibid.
30. UNICEF Early Childhood Development Section, 'UNICEF's Programme Guidance for Early Childhood Development' (internal document), 2017.

ENDNOTES

31. Black, Maureen M., et al., 'Early Childhood Development Coming of Age: Science through the life course', *The Lancet*, series 0140-6736, no. 16, 4 October 2016, p. 3, <www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31389-7.pdf>; and Britto, Pia R., et al., 'Nurturing Care: Promoting early childhood development', *The Lancet*, vol. 389, no. 10064, January 2017, pp. 91–102, <www.sciencedirect.com/science/article/pii/S0140673616313903>

32. Black, Maureen M., et al., 'Early Childhood Development Coming of Age: Science through the life course', *The Lancet*, series 0140-6736, no. 16, 4 October 2016, p. 2, <www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31389-7.pdf>.

33. Ibid.

34. Victora, Cesar G., et al., 'Breastfeeding in the 21st Century: Epidemiology, mechanisms, and lifelong effect', *The Lancet*, vol. 387, no. 10017, 30 January 2016, pp. 475–490, <www.sciencedirect.com/science/article/pii/S0140673615010247?via%3Dihub>.

35. United Nations Children's Fund, *From the First Hour of Life: Making the case for improved infant and young child feeding everywhere*, UNICEF, New York, October 2016, p. 42, <https://data.unicef.org/wp-content/uploads/2016/10/From-the-first-hour-of-life-1.pdf>.

36. Ibid., p. 10.

37. Shekar, Meera, et al., *An Investment Framework for Nutrition Reaching the Global Targets for Stunting, Anemia, Breastfeeding, and Wasting*, The World Bank Group, Washington, DC, 2016, p. 5, <https://openknowledge.worldbank.org/handle/10986/25292>; and United Nations Children's Fund, World Health Organization and the World Bank Group, *Levels and Trends in Child Malnutrition: Joint Child Malnutrition Estimates – Key findings of the 2017 edition*, New York, Geneva, Washington, DC, March 2017, <http://data.unicef.org/wp-content/uploads/2017/05/JME-2017-brochure-1.pdf>.

38. United Nations Children's Fund, World Health Organization and the World Bank Group, *Levels and Trends in Child Malnutrition: Joint Child Malnutrition Estimates – Key findings of the 2017 edition*, New York, Geneva, Washington, DC, March 2017, <http://data.unicef.org/wp-content/uploads/2017/05/JME-2017-brochure-1.pdf>.

39. Ibid., p. 2.

40. Ibid.

41. Guerrant, Richard L., et al., 'Potential Long-Term Consequences of Early Childhood Enteric and Parasitic Infections', in *Institute of Medicine Forum on Microbial Threats*, edited by Stacy L. Knobler et al., National Academies Press, Washington, DC, 2004, pp. 83–93, <https://www.ncbi.nlm.nih.gov/books/NBK83698>.

42. Center on the Developing Child, *The Foundations of Lifelong Health Are Built in Early Childhood*, Harvard University Center on the Developing Child, Cambridge, MA, 2010, pp. 5–7, <http://developingchild.harvard.edu/resources/the-foundations-of-lifelong-health-are-built-in-early-childhood>.

43. Victora, Cesar G., et al., 'Worldwide Timing of Growth Faltering: Revisiting implications for interventions', *Pediatrics*, vol. 125, no. 3, 2010, pp. e473–480.

44. Bhutta, Z. A., et al., 'Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What can be done and at what cost?', *The Lancet*, vol. 382, no. 9890, 2013, pp. 452–477.

45. United Nations Children's Fund, *From the First Hour of Life: Making the case for improved infant and young child feeding everywhere*, UNICEF, New York, October 2016, p. 24, <https://data.unicef.org/wp-content/uploads/2016/10/From-the-first-hour-of-life-1.pdf>.

46. United Nations Children's Fund, 'Unleashing Children's Potential: A partnership between UNICEF and the H&M Foundation', internal document of questions on an impact report, UNICEF, New York, February 2017.

47. Tanner, Jeffery C., Tara Candland and Whitney S. Odden, 'Later Impacts of Early Childhood Interventions: A systematic review', Independent Evaluation Group Working Paper 2015/3, World Bank Group, Washington, DC, 2015, p. 2, <http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/12/29/090224b083ff6348/2_0/Rendered/PDF/Later0impacts000a0systematic0review.pdf>.

48. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e232.full.pdf>.

49. Walker, Susan P., et al., 'Child Development: Risk factors for adverse outcomes in developing countries', *The Lancet*, vol. 369, 13 January 2007, pp. 145–157.

50. United Nations Children's Fund, *Clear the Air for Children*, UNICEF, New York, October 2016, <https://www.unicef.org/publications/files/UNICEF_Clear_the_Air_for_Children_30_Oct_2016.pdf>.

51. Ibid., pp. 41 and 29.

52. Ibid., pp. 29–31.

53. Ibid., p. 8.

54. Ibid., p. 25.

55. Ibid., p. 9.

56. United Nations Children's Fund, *Thirsting for a Future: Water and children in a changing climate*, UNICEF, New York, March 2017, p. 14, <https://www.unicef.org/publications/files/UNICEF_Thirsting_for_a_Future_REPORT.pdf>.

57. Ibid., p. 48.

58. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e232.full.pdf>.

59. Center on the Developing Child, Harvard University, 'Key Concepts: Toxic Stress', <http://developingchild.harvard.edu/science/key-concepts/toxic-stress>, accessed 29 April 2017.

60. Ibid.

61. Ibid.

62. Tanner, Jeffery C., Tara Candland and Whitney S. Odden, 'Later Impacts of Early Childhood Interventions: A systematic review', Independent Evaluation Group Working Paper 2015/3, World Bank Group, Washington, DC, 2015, p. 2, <http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/12/29/090224b083ff6348/2_0/Rendered/PDF/Later0impacts000a0systematic0review.pdf>.

63. National Scientific Council on the Developing Child, 'The Science of Neglect: The persistent absence of responsive care disrupts the developing brain', Working Paper No. 12, Center on the Developing Child, Harvard University, Cambridge, MA, December 2012, <http://developingchild.harvard.edu/wp-content/uploads/2012/05/The-Science-of-Neglect-The-Persistent-Absence-of-Responsive-Care-Disrupts-the-Developing-Brain.pdf>.

64. Shonkoff, Jack P., et al., 'The Lifelong Effects of Early Childhood Adversity and Toxic Stress', *Pediatrics*, vol. 129, no. 1, January 2012, pp. 232–246.

65. Ibid.

66. Center on the Developing Child, Harvard University, 'Key Concepts: Toxic Stress', <http://developingchild.harvard.edu/science/key-concepts/toxic-stress/>, accessed 29 April 2016.

67. Center on the Developing Child, Harvard University, 'Key Concepts: Toxic Stress', <http://developingchild.harvard.edu/science/key-concepts/toxic-stress>, accessed 29 April 2016; and Tanner, Jeffery C., Tara Candland and Whitney S. Odden, 'Later Impacts of Early Childhood Interventions: A systematic review', Independent Evaluation Group Working Paper 2015/3, World Bank Group, Washington, DC, 2015, p. 32, <http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/12/29/090224b083ff6348/2_0/Rendered/PDF/Later0impacts000a0systematic0review.pdf>.

68. Al-Hassan, Suha, 'Evaluation of the Better Parenting Programme: A study for UNICEF', United Nations Children's Fund, New York, June 2009, pp. 16–17, <https://www.unicef.org/evaldatabase/files/Final_report_of_BPP-June_Jordan.pdf>.

69. Ibid., pp. 24–25.

70 Ibid.

71. Britto, Pia R., et al., 'Nurturing Care: Promoting early childhood development', *The Lancet*, vol. 389, no. 10064, January 2017, pp. 91–102, <www.sciencedirect.com/science/article/pii/S0140673616313903>.

72. Milteer, Regina M., et al., 'The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bond: Focus on children in poverty,' *American Academy of Pediatrics*, vol. 1129, no. 1, January 2012, pp. 183–191, <http://pediatrics.aappublications.org/content/pediatrics/129/1/e204.full.pdf>.

73. Center on the Developing Child, Harvard University, 'Key Concepts: Brain architecture', <http://developingchild.harvard.edu/science/key-concepts/brain-architecture>, accessed 29 April 2017; and Center on the Developing Child, Harvard University, 'Key Concepts: Serve and return', <http://developingchild.harvard.edu/science/key-concepts/serve-and-return>, accessed 26 June 2017.

74. Center on the Developing Child, Harvard University, 'Key Concepts: Neglect', <http://developingchild.harvard.edu/science/deep-dives/neglect/>; and Key Concepts: Brain architecture, <http://developingchild.harvard.edu/science/key-concepts/brain-architecture>, accessed 29 April 2017.

75. Ibid.

76. Encyclopedia on Early Childhood Development, 'Play', <www.child-encyclopedia.com/play>, accessed 30 July 2017.

77. Center of Excellence for Early Childhood Development, 'Child's Play: Learning that comes naturally', Encyclopedia on Early Childhood Development, Montreal, 2010–2014, p. 2, <www.child-encyclopedia.com/sites/default/files/docs/coups-oeil/child-s-play-info.pdf>; and Christakis, Dimitri A., Frederick J. Zimmerman and Michelle M. Garrison, 'Effect of Block Play on Language Acquisition and Attention in Toddlers: A pilot randomized controlled trial', *Archive of Pediatric Adolescent Medicine*, vol. 161, no. 10, 2007, pp. 967–971, doi:10.1001/archpedi.161.10.967.

78. Carlson, Stephanie M., Rachel E. White and Angela Davis-Unger, 'Evidence for a Relation between Executive Function and Pretence Representation in Preschool Children', *Cognitive Development*, vol. 29, January–March 2014, pp. 1–16, <www.sciencedirect.com/science/article/pii/S0885201413000506>; and Fiorelli, Julie A., and Sandra W. Russ, 'Pretend Play, Coping and Subjective Well-Being in Children: A follow-up study', *American Journal of Play*, vol. 5, no. 1, 2012, pp. 81–103, <http://files.eric.ed.gov/fulltext/EJ985605.pdf>.

79. UNICEF global databases, based on MICS, DHS and other nationally representative surveys, 2005-2016.

80. Bornstein, Marc H., and Diane L. Putnick, 'Cognitive and Socioemotional Caregiving in Developing Countries', *Child Development*, vol. 83, no. 1, January 2012, pp. 46–61.

81. Ibid.

82. Luca, Jane E., 'Side by Side with Responsive Parents in the Care for Child Development Intervention', *Early Childhood Matters: Advances in early childhood development*, Bernhard van Leer Foundation, no. 125, the Hague, 2016, p. 66, <https://bernardvanleer.org/app/uploads/2016/06/Early-Childhood-Matters-2016.pdf>.

83. Yousafzi, Aisha K., et al., '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*, vol. 384, no. 9950, 16 June 2014, pp. 1282–1293, <www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60455-4/fulltext>.

84. UNICEF global databases, based on MICS, DHS and other nationally representative surveys, 2005-2016

85. United Nations Educational, Scientific and Cultural Organization Institute for Statistics, <http://data.uis.unesco.org/#>.

86. Ministry of Education of The Federal Democratic Republic of Ethiopia, Education Sector Development Programme V (ESDP V) 2008 – 2012 E.C. 2015/16 – 2019/20 G.C, Programme Action Plan, 2015, Addis Ababa, p. 78, <www.cmpethiopia.org/content/download/2267/9609/file/ESDP%20V%20FINAL.pdf>.

87. Richter, Linda M., et al., 'Investing in the Foundation of Sustainable Development: Pathways to scale up for early childhood development', *The Lancet*, series 0140-6736, vol. 16, 4 October 2016, pp. 108–109, <http://thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31698-1.pdf>.

88. García, Jorge Luis, et al., 'The Life-cycle Benefits of an Influential Early Childhood Program', Human Capital and Economic Opportunity Global Working Group, Working Paper 2016–035, Chicago, December 2016, p. 1, <https://heckmanequation.org/resource/lifecycle-benefits-influential-early-childhood-program>, accessed 22 April 2017.

89. Heckman, James J., et al., 'The Rate of Return to the High/Scope Perry Preschool Program', *Journal of Public Economics*, vol. 94, 2010, pp. 114–128; and García, Jorge Luis, et al., 'The Life-cycle Benefits of an Influential Early Childhood Program', Human Capital and Economic Opportunity Global Working Group, Working Paper 2016–035, Chicago, December 2016.

90. García, Jorge Luis, et al., 'The Life-cycle Benefits of an Influential Early Childhood Program', Human Capital and Economic Opportunity Global Working Group, Working Paper 2016–035, Chicago, December 2016, p. 1, <https://heckmanequation.org/resource/lifecycle-benefits-influential-early-childhood-program>, accessed 22 April 2017.

91. Ibid.

92. Ibid., p. 21.

93. Ibid., p. 22.

94. Ibid., p. 22.

95. Gertler, Paul, et al., 'Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica', *Science*, vol. 344, no. 6187, 30 May 2014, pp. 998-1001, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574862>.

96. Ibid.

97. Zubairi, Asma, and Pauline Rose, *Bright and Early: How financing pre-primary education gives everyone a fair start in life – Moving towards quality early childhood development for all*, Theirworld, London, 2016, p. 5, <http://theirworld.org/resources/detail/bright-and-early-report-on-financing-pre-primary-education>.

98. Richter, Linda M., et al., 'Investing in the Foundation of Sustainable Development: Pathways to scale up for early childhood development', *The Lancet*, series 0140-6736, vol. 16, 4 October 2016, pp. 108–109, <http://thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31698-1.pdf>.

99. Ibid.

100. Ibid.

101. Zubairi, Asma, and Pauline Rose, *Bright and Early: How financing pre-primary education gives everyone a fair start in life – Moving towards quality early childhood development for all*, Theirworld, London, 2016, p. 8, <http://theirworld.org/resources/detail/bright-and-early-report-on-financing-pre-primary-education>.

102. Dahn, Bernice, et al., *Strengthening Primary Health Care through Community Health Workers: Investment case and financing recommendations*, Johns Hopkins University, the Office of the United Nations Special Envoy for the Health-MDGs, the World Bank, Partners in Health, Last Mile Health, the Clinton Foundation, ALMA and the governments of Ethiopia and Liberia, Baltimore, 2015, p. 5, <www.who.int/hrh/news/2015/CHW-Financing-FINAL-July-15-2015.pdf>.

103. International Food Policy Research Institute, *The Global Nutrition Report: From promise to impact – Ending malnutrition by 2030*, IFPRI, Washington, DC, 2016, p. 77, <http://data.unicef.org/wp-content/uploads/2016/06/130565-1.pdf>.

104. O'Gara, Chloe, 'Education-based Approaches to Early Childhood Development', in *Handbook of Early Childhood Development Research and Its Impact on Global Policy*, edited by Pia Rebello Britto et al., Oxford University Press, New York, 2013, pp. 227–241.

105. United Nations Children's Fund, *Generation 2030 in Africa: Child demographics in Africa*, UNICEF, New York, August 2014, p. 7, <https://www.unicef.org/publications/files/Generation_2030_Africa.pdf>.

106. Ibid.

107. International Commission on Financing Global Education Opportunity, *Financing Early Childhood Development: An analysis of international and domestic sources in low- and middle-income countries*, Results for Development Institute, August 2016, p. 20.

108. Shekar, Meera, et al., *Investing in Nutrition: The Foundation for Development – An investment framework to reach the global nutrition targets*, The World Bank Group, 2016, p. 3, <http://documents.worldbank.org/curated/en/963161467989517289/pdf/104865-REVISED-Investing-in-Nutrition-FINAL.pdf>.

109. Zubairi, Asma, and Pauline Rose, *Bright and Early: How financing pre-primary education gives everyone a fair start in life – Moving towards quality early childhood development for all*, Theirworld, London, 2016, p. 6, <http://theirworld.org/resources/detail/bright-and-early-report-on-financing-pre-primary-education>.

110. International Commission on Financing Global Education Opportunity, *Financing Early Childhood Development: An analysis of international and domestic sources in low- and middle-income countries*, Results for Development Institute, August 2016, p. 20, <www.resultsfordevelopment.org/sites/resultsfordevelopment.org/files/resources/ECD%20Financing%20Study%20Volume%20I_EdCommission_2016_vp_au_09222016.pdf>.

111. United Nations Children's Fund, *The State of the World's Children: A fair chance for every child*, UNICEF, New York, June 2016, p. 12, <https://www.unicef.org/publications/files/UNICEF_SOWC_2016.pdf>.

112. Ibid., p. 23.

113. Ibid., p. 72.

114. UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys, 2005–2016.

115. Black, Maureen M., et al., 'Early Childhood Development Coming of Age: Science through the life course', *The Lancet*, vol. 0140-6736, no. 16, 4 October 2016, pp. 2–3, <www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)31389-7.pdf>.

116. UNICEF Early Childhood Development Section, 'UNICEF's Programme Guidance for Early Childhood Development,' internal document, 2017.

117. Departamento de Estadísticas e Información en Salud DEIS-MINSAL, 2016, <http://www.deis.cl>.

118. Government of Chile, 'S.E. la Presidenta de la República, Michelle Bachelet, encabeza la ceremonia de extensión del programa Chile Crece Contigo', <https://prensa.presidencia.cl/discurso.aspx?id=51590>, accessed 2 August 2017.

119. The Republic of Uganda, *The National Integrated Early Childhood Development Policy of Uganda*, Uganda Ministry of Gender, Labour and Social Development, Kampala, March 2016.

120. Richter, Linda M., et al., 'Investing in the Foundation of Sustainable Development: Pathways to scale up for early childhood development', *The Lancet*, vol. 389, no. 10064, January 2017, pp. 103–118, <http://thelancet.com/journals/lancet/article/PIIS0140-6736(16)31698-1/fulltext>.

121. Britto, Pia R., et al., 'Nurturing Care: Promoting early childhood development', *The Lancet*, vol. 389, no. 10064, January 2017, pp. 91–102, <www.sciencedirect.com/science/article/pii/S0140673616313903>.

122. Variables in this analysis were provided by to UNICEF by the WORLD Policy Analysis Center at the University of California, Los Angeles, https://worldpolicycenter.org/. Population figures come from 2017 United Nations Population Division. The variables include: two years of free pre-primary education; paid breastfeeding breaks for new mothers for the first six months; and six months paid maternity leave and four weeks paid paternity leave.

123. Putcha, Vidya, Arjun Upadhyay and Nicholas Burnett, 'A Call for Public Financing: Innovative finance is welcome, but not enough', in *Early Childhood Matters: Advances in early childhood development*, Bernhard van Leer Foundation, no. 125, The Hague, 2016, pp. 58–63 < https://bernardvanleer.org/app/uploads/2016/06/Early-Childhood-Matters-2016.pdf>.

124. Macours, Karen, Norbert Schady and Renos Vakis, 'Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment', *American Economic Journal: Applied Economics*, vol. 4, no. 2, April 2012, pp. 247–273, <https://www.aeaweb.org/articles?id=10.1257/app.4.2.247>.

125. Duque, Valentina, Maria Rosales-Rueda and Fabio Sanchez, 'Integrating Early-life Shocks and Human Capital Investments on Education Outcomes: Evidence from Colombia', 10 January 2017 draft, <http://sites.uci.edu/mrosales/files/2014/10/shocks_investments_main.pdf>; Adhvarya, Achyuta, et al., 'Helping Children Catch Up: Early life shocks and the *Progresa* experiment', <http://static1.1.sqspcdn.com/static/f/884336/26616154/1445366941330/AMNT_DynSubs_Oct2015.pdf?token=OYJsLrScLjSh91LIjmP91koEIfI%3D>; and Berman, Daphna, and Aliza Marcus, 'Nepal: Can information and cash improve children's development – From evidence to policy', the World Bank Group, Washington, DC, 2017, <http://documents.worldbank.org/curated/en/578991501084554806/Nepal-Can-information-and-cash-improve-childrens-development>. See also Tanner, Jeffery C., Tara Candland and Whitney S. Odden, 'Later Impacts of Early Childhood Interventions: A systematic review', Independent Evaluation Group Working Paper 2015/3, World Bank Group, Washington, DC, 2015.

126. United Nations Children's Fund, 'Unleashing Children's Potential: A partnership between UNICEF and the H&M Foundation', internal document of questions on an impact report, UNICEF, New York, February 2017.

127. Republic of Rwanda, *Shaping Our Development: Economic development and poverty reduction strategy*, 2013–2018, International Monetary Fund, Washington, DC, December 2013, p. 79, <https://www.imf.org/external/pubs/ft/scr/2013/cr13360.pdf>.

128. United Nations Children's Fund, 'Collaboration Plan between UNICEF and the H&M Conscious Foundation 1 February 2014 to 31 January 2017', UNICEF internal partnership plan, Early Childhood Development Section, Programme Division, 2014.

129. Lake, Anthony, 'Applying the Science: How what we are learning about brain development should shape policies, practical action, and public advocacy,' in *Early Childhood Matters: Advances in early childhood development*, Bernhard van Leer Foundation, no. 125, The Hague, 2016, p. 13.

130. Ibid.

131. Resolution adopted by the United Nations General Assembly, 'Transforming Our World: The 2030 Agenda for Sustainable Development', A/RES/70/1, 25 September 2015, <www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E>.

132. Ibid.

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Recent advances in neuroscience show us that early childhood is a critical opportunity to shape a child's development. I see this science unfold when I play games, sing, read, feed, love and nurture my son. In the short term, these activities help him learn to laugh, feel joy and become more creative and imaginative. But knowing that these relatively simple actions have such a profound impact on his long-term development, on his education and future successes, makes every moment I spend with him even more important.

From my experience as a father, I understand the importance of the early moments of a child's life. I call on governments and policymakers to help all parents and caregivers build enriching environments where they can pay loving attention to their babies and young children.

Novak Djokovic, UNICEF Goodwill Ambassador and Founder,
Novak Djokovic Foundation

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