Bucking the inequality gradient through early child development

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Analysis

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A good start in life is the key to reducing health and social inequalities in society. **Clyde Hertzman and colleagues** argue that governments in rich and poor countries should be investing more in programmes to support early child development

What happens to children in their early years is critical for their

development throughout life.[1] Healthy early childhood development, including the physical, social-emotional, and language-cognitive domains, influences obesity and stunting, mental health, heart disease, competence in literacy and numeracy, criminality, and economic participation.[2] Investment in early childhood is thus a powerful strategy for social development in both rich and poor countries. The economic returns to a society over the life course are likely to more than repay the original investment, especially if they are reinforced in later childhood.[3] [4] [5] We examine the challenges for resource rich and poor countries.

Gradients in child development

In every society, regardless of wealth, differences in socioeconomic position translate into inequalities in child development. Each step up the family social and economic ladder results in improved prospects for child development. Gradients in developmental outcomes result both from readily identifiable factors that are intimately connected to the child (such as the quality of time and care provided by parents and the physical conditions of the child's surroundings) and from more distal factors (whether government policies provide families and communities with sufficient income and employment, healthcare resources, early childhood education, safe neighbourhoods, decent housing, etc). Gradients have been shown for infant and child mortality, low birth weight, injuries, dental caries, malnutrition, infectious diseases, and use of healthcare services.[6] [7] [8] [9] [10] [11] They are evident in every country in which they have been measured, rich or poor.[12]

In the cognitive domain, gradients are found for school enrolment, mathematical and language achievement, and literacy.[13] In resource rich countries gradients in physical, social-emotional, and language-cognitive development emerge by the time children start school and predict school success, such that at least 25% of children reach adulthood without the basic literacy and numeracy skills needed for employment.[14] A comprehensive study of early child development in British Columbia found that the proportion of variation at age 5 attributable to neighbourhood socioeconomic characteristics ranged from one fifth to a half for five measures of development (table⇓).[15] Overall, more than 40% of the variance can be modelled by a simple linear relation.

Variation in early development in British Columbia explained by neighbourhood socioeconomic characteristics measured with five scales of early development instrument[15]

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Similar gradients have been found in resource poor countries. Reading literacy among 9-10 year olds has been shown to be related to socioeconomic position in 43 resource poor countries.[14] By middle childhood (6-12 years), strong gradients emerge in social-emotional development, particularly for externalising behaviour.[16]

The gradient means that although societies need to be concerned with those in the lowest socioeconomic groups, the largest overall burden of adverse outcome is spread, albeit at lower prevalence, across the more populous middle class. In principle, the optimum strategy for improving child development would be to try to flatten the gradient upwards by spreading the conditions for healthy child development as broadly as possible throughout society. International comparisons of school success show that societies with the flattest social gradients have smaller absolute differences in children's basic competencies.[17] These findings challenge us to understand how to provide access to factors fundamental to health and development as rights of citizenship, rather than according to socioeconomic privilege.

Early child development programmes

Evaluating the effectiveness of early child development programmes and services is not straightforward. Child development is influenced by factors in the family, community, and broader socioeconomic environment that are outside the scope of most interventions. Thus, an intervention can, in isolation, be shown to be effective, but the overall state of early child development can still fall because of the influence of broader social determinants. Notwithstanding this caveat, quality early child and development programmes and services are those that bring children into contact with the nurturing conditions needed for survival, growth, and development[18 19 20 21] and that lead to better physical, social-emotional, and cognitive outcomes in childhood,[22 23] and improved health and wellbeing in adulthood.[23 24] Most programmes address one or more of the following key issues: breast feeding, child care, early childhood education, nutrition, parenting, community strengthening, or institutional capacities such as instructional and training programmes.

Although all children can benefit from high quality programmes, disadvantaged groups stand to benefit most. This includes the 40% of children in resource poor nations who are living in extreme poverty; the 10.5 million children who die from preventable diseases before they are 5 years old; and all children who do not attend school.[25] Juxtaposing these insights with the realities of the gradient leads to a clear policy corollary that is, nonetheless, difficult to implement: the need to prioritise

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the most disadvantaged while, at the same time, achieving universal coverage. The UK is attempting this through the Sure Start programme, which was developed to tackle health inequalities, reduce child poverty, and break cycles of intergenerational transmission of deprivation, is being widened from disadvantaged communities to include all areas. The programme has been shown to benefit social behaviour, reduce negative parenting, improve home learning environments, and cut violence.[26] [27] Sure Start centres in areas with greatest need will offer more support than those in other areas, including full day care provision for children, good quality teacher input to lead the development of learning within the centre, child and family health services, parental outreach, family support services, and effective links with employment services.[28]

Sweden is a prime example of the universal approach. The country is in the top three in the world on measures of infant mortality, low birth weight, immunisation rates, and child wellbeing.[3] [29] It has a comprehensive system that provides high quality, high coverage prenatal care; an incomes policy that brings virtually all families with young children above the poverty line; up to 18 months' paid parental leave with incentives for the father to take some of it; monthly nurse monitoring in the first 18 months of life to identify special developmental challenges; universal, non-compulsory, access to publicly funded high high quality programmes of early learning and care (which 80-90% of pre-school children attend) that are run by university educated staff; and, finally, a gradual transition from play based to formal learning at school age that avoids privileging those born at the start of the school year and disadvantaging those born at the end.

One example of a social protection approach is Mexico's conditional cash transfer scheme, which gives money to poor mothers on the condition that their children attend school and health visits. The approach has reduced stunting and overweight as well as improving motor and cognitive development and receptive language skills among disadvantaged families.[30]

Early child development programmes are judged according to three categories of quality (box). In developing countries adding stimulation and care components to nutrition interventions has been shown to improve child outcomes, including physical health.[32] Similarly, using gender neutral philosophies and curriculums has been shown, in some cases, to improve both maternal health and child outcomes.[33]

Assessment of early child development programmes

Structure

- Staff training and expertise
- Staff to child ratios
- Group size
- Physical characteristics of the space or service
- Available materials and resources
- Adherence to health and safety standards

Process

- Staff stability
- Continuity and job satisfaction
- Relationships between services providers, caregivers, and children
- Relationships between sponsors (including community, civil society, government, and multinational donor agencies)[31]

Nurturant environment

- Encourage exploration
- Provide mentoring in basic skills
- Celebrate the child's developmental advances
- Development of new skills is guided and extended
- Protection from inappropriate discipline
- Language environment is rich and responsive

Role of healthcare systems

In developing countries linking early child development programmes and services to healthcare systems holds the promise of mutual benefit. The healthcare system already employs trained professionals, provides facilities and services, and, most importantly, is a primary contact for mothers and children. Worldwide, young children have more exposure to healthcare services in their early years than to education systems, which many do not encounter until age 6-8 years. Thus, the healthcare system can link early development programmes to children and families who would otherwise have no access and can often do so for relatively

small marginal costs.

Scaling up

Programmes can shift norms of early child development and reduce inequalities if they are universal and generous. A prime example is Cuba's *Educa a Tu Hijo* (Educate your child) programme.[35]

Health and early childhood education in Cuba

In Cuba, basic indicators of child health and development (mortality in infants and under 5s, and low birthweight rates) are comparable to those of North America and Western Europe. Cuban children have high rates of school attendance and outperform in primary and secondary education.[36]

Between 1983 and 2003 Cuba phased in *Educa a Tu Hijo* (Educate your child), a community based, family centred programme that integrates health and education services into a single system, prioritising health, learning, behaviour, and life trajectories during prenatal life, infancy, childhood, and adolescence. Child development services start early, are universal, and are conducted with the participation of different government ministries, social organisations, families, and an extended social network including teachers, doctors, and other trained professionals.

All pregnant women in Cuba have at least 12 prenatal medical checks and deliver in a maternity clinic or specialised health centre. They are entitled to 18 weeks' maternity leave before the birth and 40 weeks afterwards (which can be taken by either parent). Children receive between 104 and 208 stimulation and development monitoring sessions up to the age of 2 years and 162 and 324 group sessions from age 3-5.

A recent follow-up of *Educa a Tu Hijo* showed that only 13% of participating children reach school age with unsatisfactory development in key domains (motor skills, cognition, social-personal, and personal hygiene). This is about half of what it is in Canada and Australia. This may be a key contributor to school success in Cuba.

Government commitment

The Convention on the Rights of the Child holds governments responsible for monitoring both the state of young children's evolving

capacities (language-cognitive, social-emotional, and physical) and also whether their living conditions support or undermine these evolving capacities. Most importantly, governments are charged with taking action to create conditions conducive to young children's development. The Commission on the Social Determinants of Health recommended that "governments build universal coverage of a comprehensive package of quality early child development programs and services for children, mothers, and other caregivers, regardless of ability to pay."[1] In order to achieve these goals the global community will need to work in new ways, collaborating across sectors at the international level and attracting public investment on a large scale. As we have shown, there are examples of wealthy, middle income, and poor societies that are facing up to this challenge. Yet, in many other countries even birth registration is incomplete, and a commitment to improving early child development must begin, simply, with a commitment to allow all children to officially exist.

Notes

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Footnotes

Contributors and sources: The team of authors cover the disciplines of social epidemiology, nursing, nutrition, anthropology, and developmental psychology. The first five authors made up the global knowledge hub on early child development for the WHO Commission on the Social Determinants of Health, whose sources of information included peer reviewed literature and a network of expert key informants from around the world. AT visited Cuba to study its early child development system and produced a report on the subject. The other three authors (RB, TH, and MM) were key authors of the WHO Commission report.

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