

From Neurons to Neighborhoods : The Science of Early Childhood Development

Research and Studies of Core Relevance to the Early Childhood Development Field.

The Abecedarian Project

The Frank Porter Graham Child Development Institute's Abecedarian Project is one of the world's oldest and most oft-cited early childhood education programs. Children born between 1972 and 1977 were randomly assigned as infants to either the early educational intervention group or the control group. Children in the experimental group received full-time, high-quality educational intervention in a childcare setting from infancy through age 5. Each child had an individualized prescription of educational "games" incorporated into the day. These activities focused on social, emotional, and cognitive areas of development but gave particular emphasis to language. Researchers monitored children's progress over time with follow-up studies conducted at ages 12, 15, 21, 30, and 35. The findings continue to demonstrate that important, long-lasting benefits are associated with high-quality early childhood program.

Advancing Early Childhood Development: From Science to Scale

The 2016 Lancet Early Childhood Development Series highlights early childhood development at a time when it has been universally endorsed in the 2030 Sustainable Development Goals. This Series considers new scientific evidence for interventions, building on the findings and recommendations of previous Lancet Series on child development (2007, 2011), and proposes pathways for implementation of early childhood development at scale. The Series emphasizes 'nurturing care', especially of children below three years of age, and multi-sectoral interventions starting with health, which can have wide reach to families and young children through health and nutrition.

Adverse Childhood Experiences (ACEs) Study

The CDC-Kaiser Permanente Adverse Childhood Experiences (ACE) Study is one of the largest investigations of childhood abuse and neglect and later-life health and well-being.

The original ACE Study was conducted at Kaiser Permanente from 1995 to 1997 with two waves of data collection. Over 17,000 Health Maintenance Organization members from Southern California receiving physical exams completed confidential surveys regarding their childhood experiences and current health status and behaviors.

The CDC continues ongoing surveillance of ACEs by assessing the medical status of the study participants via periodic updates of morbidity and mortality data.

Bucharest Early Intervention Project

The Bucharest Early Intervention Project is a joint collaboration between researchers at Tulane University, University of Maryland, and Boston Children's Hospital. The study, which began in the fall of 2000, seeks to examine the

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effects of early institutionalization on brain and behavior development, and to examine the impact of high quality foster care as an intervention for children who have been placed in institutions. To date the study has followed children from infancy through age twelve, assessing a wide range of developmental domains including measure of physical growth, cognitive function, social-emotional development, attachment, brain development, and more.

Chicago Longitudinal Study

The Chicago Longitudinal Study (CLS; Reynolds, 1991, 1999; Reynolds, Bezruczko, Hagemann, 1997) investigates the educational and social development of a same-age cohort of 1,539 low-income, minority children (93% African American) who grew up in high-poverty neighborhoods in central-city Chicago and attended government-funded kindergarten programs in the Chicago Public Schools in 1985-1986. Children were at risk of poor outcomes because they face social-environmental disadvantages including neighborhood poverty, family low-income status, and other economic and educational hardships.

Dunedin Study

The Dunedin Multidisciplinary Health and Development Study (also known as the Dunedin Study) is a detailed study of human health, development and behavior, founded by Dr Phil A. Silva. The Dunedin Study has followed the lives of 1037 babies born between 1 April 1972 and 31 March 1973 at Queen Mary Maternity Hospital, Dunedin, New Zealand. The Study is now in its fifth decade and has produced over 1150 publications and reports, many of which have influenced or helped inform policy makers in New Zealand and overseas.

Early Window Project " on effects of early TV viewing

For two cohorts of children from low-to-moderate income families, television viewing was measured over 3 years, and tests of reading, math and school readiness were administered annually. The results affirm the conclusion that the relations of early television viewed to early academic skills depend primarily on the content of the programs viewed.

English and Romanian Adoptee Study

The English and Romanian Adoptee (ERA) project is a longitudinal, multi-method investigation of the development of children adopted into the UK from Romania in the early 1990s.

The ERA, led by Professor Michael Rutter and Professor Edmund Sonuga-Barke, has followed a random sample of 165 Romanian children, most of whom had spent their early lives in institutions in which conditions ranged from poor to abysmal. Its aim is to examine the extent to which children could recover when extreme deprivation in early life is followed by a middle childhood within a safe family environment.

HighScope Perry Preschool Study

This study examines the lives of 123 children born in poverty and at high risk of failing in school. From 1962-1967, at ages 3 and 4, the subjects were randomly divided into a program group that received a high-quality preschool program based on HighScope' Educational Research Foundation's participatory learning approach and a comparison group who received no preschool program. In the study's most recent phase, 97% of the study participants still living were interviewed at age 40. Additional data were gathered from the subjects' school, social services, and arrest records. The study found that adults at age 40 who had the preschool program had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school than adults who did not have preschool.

Isle of Wight study/Michael Rutter

The Isle of Wight Studies began in 1964-65 with a series of epidemiological studies of educational, psychiatric and physical disorders in 9- to 11-year-old children. These early studies were financed by the Department of Education and Science and the Foundation for Child Development (then the Association for the Aid of Crippled Children). The findings were fully reported in two books (Rutter, Tizard & Whitmore, 1970; Rutter, Graham & Yule, 1970)

The Jamaican Early Childhood Intervention (and the 20-year longitudinal follow-up in 2008)

The original study, conducted in 1986-87, looked at 127 stunted children between 9 and 24 months. Children were then divided into four groups and given either psychosocial stimulation, nutrition intervention, both or neither. A control group included 84 non-stunted children from the same neighborhoods. Researchers then followed up with the subjects 20

years later" at about age 22" to compare the results of the interventions.

Kauai Longitudinal Study

A longitudinal study that traced the developmental paths of a multiracial cohort of children who had been exposed to perinatal stress, chronic poverty, and a family environment troubled by chronic discord and parental psychopathology. Individuals are members of the Kauai Longitudinal Study, which followed all children born in 1955 on a Hawaiian island from the perinatal period to age 40. Several clusters of protective factors and processes were identified that enabled most of these high-risk individuals to become competent and caring adults. Implications of the findings for developmental theory and social action programs are discussed, and issues for future research are identified.

(Summary, by Bobbi Emel)

Werner, E. E. (1989). Children of the garden island. *Scientific American*, 260 (4), 106-111.

Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A study of resilient children*. New York: McGraw-Hill.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.

Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife: Risk, resilience, and recovery*. Ithaca, NY: Cornell University Press.

Minnesota Study of Risk and Adaptation from Birth to Adulthood

Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, A. W. (2005). *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood*. New York, NY: Guilford Press.

A vast body of data on the ways in which individuals' strengths and vulnerabilities are shaped by myriad influences, including early experiences, family and peer relationships throughout childhood and adolescence, variations in child characteristics and abilities, and socioeconomic conditions. Implications for clinical intervention and prevention are also addressed.

From Neurons to Neighborhoods:

National Research Council and Institute of Medicine. (2000). *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Committee on Integrating the Science of Early Childhood Development. Eds. J.P. Shonkoff and D.A. Phillips. Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.

Nurse-Family Partnership

Nurse-Family Partnership (NFP) is an evidence-based, community health program that serves low-income women pregnant with their first child. Each vulnerable new mom is partnered with a registered nurse early in her pregnancy and receives ongoing nurse home visits. The Nurse-Family Partnership model is a unique maternal child health program that is based on rigorous evidence of effectiveness from randomized, controlled trials. Widespread replication of the Nurse-Family Partnership program in diverse communities and populations gives more confidence that investment in this program is money well spent. In fact, independent research shows that when communities adopt the Nurse-Family Partnership model, they are making a smart investment with a solid return on their investment. For example, the RAND Corporation reports that for every dollar a community invests in NFP, they can see up to \$5.70 in return.

Vulnerability, coping, and growth: from infancy to adolescence

New Haven: Yale University Press. Murphy, L. B., & Moriarty, A. E. 1. (1976).

This study describes how a group of children, observed at the Menninger Foundation from birth through adolescence, attempted to deal with internal and external stresses, and how the stress often promoted growth. Medical, psychological, and psychiatric data regarding the group are presented and analyzed.

ADDITIONAL ONLINE RESOURCES

Early Childhood Matters/Bernard van Leer Foundation

The 2016 edition addresses issues from measuring child development at population level to scaling up the early

childhood workforce and the use of innovative finance mechanisms. There are also looks at early childhood initiatives in countries such as South Africa, Uruguay, Liberia, and the Republic of Georgia.

Building Better Brains/UNICEF

A document gleaned from a Neuroscience Symposium organized by UNICEF on April 16, 2014, where 16 leading international scientists from different fields of neuroscience presented their latest evidence on the influences of experience and environment on child brain development

Center on the Developing Child/Harvard University

A multidisciplinary team committed to driving science-based innovation on child development in policy and practice, led by Dr. Jack Shonkoff. Click here for key concepts explained by the Center on the Developing Child, with accompanying text and video.

Frameworks Institute/Talking About Early Childhood Development

a toolkit compendium of over a decade of research on how Americans think about early childhood, childcare, preschool, and development, and how to increase public support for policies that support the healthy development of children.

The Heckman Equation: The Economics of Human Potential

Resources on the gains made from investing in early childhood development, by Nobel Prize-winning economist James Heckman.

UNICEF/Early Childhood Development Webpage

Reference

[Scope of Qualitative Research in Medical Education and Public Health: Qualitative Research](#)

[CLEPÂ® Human Growth & Development Book + Online \(CLEP Test Preparation\)](#)