

Current Challenges in Addressing the Realities of Poverty and Inequality in Families With Young Children: A Call for Both Policy and Intervention

Cary M. Cain, MPH, RN

Bethanie S. Van Horne, DrPH, MPH

Background

Over the last decade, there has been a growing acknowledgement of the importance of the first five years of life, and the need to support early education providers and families in optimizing both the home and school environments of our nation's youngest members. At no other time in a person's life does the body and brain develop as rapidly as it does in these first years. In fact, during the first years of life, more than one million new neural connections are formed every second. Critical to the development of these connections in the brain are the quality of the environment, relationships, and early experiences of the young child (Copple, 2012; Shonkoff & Phillips, 2000). These experiences, good or bad, "literally shape the trajectory of brain development" and influence both child and later adult outcomes (Luby et al., 2012; Luby & Rogers, 2013; Horm, Norris, Perry, Chazan Cohen, & Halle, p. 13).

From the adverse childhood experiences (ACE) study, published almost two decades ago, we learned that adversity experienced in childhood is common, and that cumulative exposure to multiple forms of adversity experienced early in life lead to increasingly poor developmental, social, and health outcomes throughout life (Felitti et al., 1998). The ACE study revealed ranked associations (Figure 1) between

the number of childhood adversities and adulthood destructive health behaviors and chronic diseases, such as alcoholism, drug abuse, depression, ischemic heart disease, stroke, cancer, diabetes, unintended pregnancy, obesity, and suicide attempts. Additionally, those who experienced six or more adversities during childhood suffered premature death on average twenty years earlier than those without adversity.

Providing an engaging and nurturing environment free of adversity for young children seems, at face value, rather simplistic; however, there are multiple factors that make this challenging. Decades of research and practice have been spent addressing the factors that impact the environments in which children live, grow, learn, sleep, play, and worship. The good news is that certain programs and interventions have been shown to positively influence home and early educational environments as well as child physical, social-emotional, and language development. The bad news is that most of these programs fail to substantially address the root causes of unsupportive environments--namely poverty and inequality--that continue to negatively influence child development and family functioning well after the child and family have completed the program.

This article discusses poverty and inequality in the contexts of the home and early educational environments of young children in the United States, demonstrates the promising results and inherent challenges of early intervention programs, and

highlights the need for population-level approaches to truly produce far-reaching and long-lasting changes needed to help all children thrive.

Poverty and Inequality in the Family and Home Environment

Approximately a quarter of the nation's children live in households that are at or below the federal poverty level (Kids Count Data Center, 2017a). These families struggle with the stressors of poverty, including low wage jobs, unemployment, violence, or mental illness (Aber, Bennett, Conley, & Li, 1997; Wood, 2003). Parents that

are socioeconomically disadvantaged are also more likely to be socially isolated and receive less social support. Over 70% of families living below the federal poverty level are single-parent households (Kids Count Data Center, 2017b). The burdens on the caregiving environment are substantial because parents with limited access to social and economic support

have fewer resources to provide stable home environments with adequate food, housing, health care, and childcare, all of which are needed to help their children thrive (Emerson & Parish, 2010; Mather, 2010; McLoyd, 1990; Schor et al., 2003). Also, compared with two-parent households, single-parent households are not able to invest as much time interacting with his or her child, which is crucial for the child's development (Kalil, Ryan, & Chor, 2014).

Young children spend the majority of their time with their family in the home. Healthy child development is fostered by parents' time and attention toward their child through a supportive and cognitively stimulating home environment (Kalil, Ziol-Guest, Ryan, & Markowitz, 2016). Central to the supportive home environment is the responsive and nurturing care provided by primary caregivers, which moderates

the effects of poverty, family stress, and maltreatment (Egeland et al., 1993; Flouri, Midouhas, Joshi, & Tzavidis, 2015). Consistent responsive parenting in early childhood has been associated with cognition, school readiness, and social and emotional regulation later in childhood (Merz et al., 2015; Peterson et al., 2015).

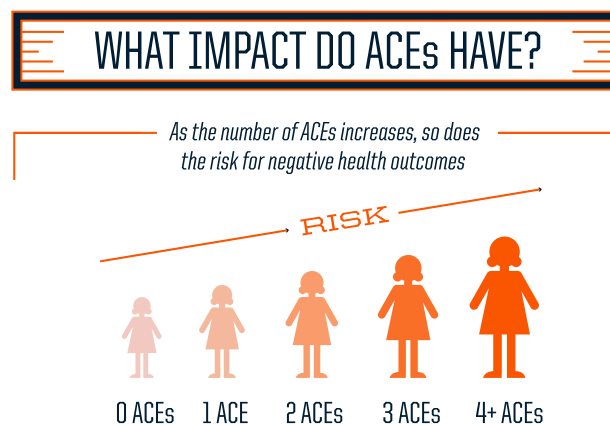
Disparities are noted in the quantity and quality of interactions that children from differing socioeconomic levels are exposed to early in life (Hart & Risley, 1995). Hart and Risely (1995) found that before reaching 4 years old, children from lower-

income households heard 32 million fewer words and more negative or harsh language compared with children from households of higher-income levels. A recent study found significant cognitive and language differences among infants from low-income households compared with those from relatively higher-income households, even at 1 year of age (Hurt & Betancourt, 2017).

Additionally, a home environment that is chaotic or without nurturing and responsive interaction is associated with changes in the nervous system and brain architecture that can lead to lifelong problems in health, behavior, and learning (Anda et al., 2006; Felitti et al., 1998; Repetti, Taylor, & Seeman, 2002; Shonkoff, 2012; Shonkoff, Garner, & Committee on ... Pediatrics, 2012).

Lack of exposure to stimulating interaction early in life leads to higher risk for developmental problems and greater challenges when later learning to read, which can lead to gaps in school readiness and disparities in academic achievement (Halle et al., 2009; Hart & Risley, 1995). Longitudinal studies have shown that children exposed to fewer early language experiences continue to demonstrate low performance in school (Walker, Greenwood, Hart, & Carta, 1994). Evidence

Figure 1. Ranked Associations Between the Number of Childhood Adversities and Adulthood Destructive Health Behaviors and Chronic Diseases



Source: Robert Wood Johnson Foundation. (2013). Used with permission from the Robert Wood Johnson Foundation.

of the associations between socioeconomic disparity and educational achievement have been known for decades (Coleman et al., 1966). Despite understanding this achievement gap, we know that income inequality has been increasing in the United States since the 1970s. As this increase has occurred, the disparity in educational achievement among children from high- and low-income families has widened by 30%–40% (Reardon, 2011; Saez & Zucman, 2014). Gaps in educational attainment place these children at risk for needing special education services and experiencing school dropout, juvenile delinquency, adolescent pregnancy, increased emergency and hospitalization visits, decreased economic productivity, unemployment, dependency on social services, and poor parenting (Doyle, Harmon, Heckman, & Tremblay, 2009; Ramey & Ramey, 1998).

Early Interventions Targeting Families With Young Children

Early interventions targeting economically disadvantaged families with young children can potentially prevent or reduce the adverse effects on brain development and prevent the proliferation of health and social problems in later life (Doyle et al., 2009; Offord & Lipman, 1999). A variety of interventions offered at multiple intensities and with varying delivery methods have shown promising effects; however, the ability to sustain these gains over time has shown mixed results as children who complete such programs continue to live and go to school in disadvantaged environments (Currie & Thomas, 1995).

Childcare Environment

Childcare is one avenue that both researchers and policy makers use to intervene with at-risk populations. Each week, roughly 11 million children under the age of 5 are in some type of childcare. Approximately 42% are with a grandparent or other relative, 35% are in center-based care, 8% in family childcare, 5% with a nanny or other home-based provider, and 5% with a friend or neighbor (Child Care Aware of America, 2016). A large body of research has demonstrated that the early disparities observed in children from low-income families can be prevented or reduced with high-quality, early

education. However, the state of our early care and education system is plagued with issues of accessibility, affordability, and quality that have served to exacerbate rather than mitigate the disparities between children living in low-income versus high-income families.

Accessibility and affordability. The ability to access and afford high-quality childcare is challenging for many families in the United States, but particularly for rural and low-income families. Infant care costs vary by location, with state averages ranging from \$4,800 in Mississippi to over \$22,000 in the District of Columbia. In 33 states and the District of Columbia, infant care costs exceed the average cost of in-state college tuition at 4-year public institutions (Gould & Cooke, 2015). In all 50 states, the cost of center-based infant care averages more than 40% of the median income for single mothers, significantly higher than the federally recommended 10% (Child Care Aware of America, 2016; U.S. Department of Health and Human Services, Administration for Children and Families, 2014). Although low-income families may be eligible for federal childcare subsidies to offset these costs, 2012 data revealed that only 15% of eligible children receive this assistance (Chien, 2015).

In addition to cost, in many areas of the country low-income and rural communities are considered “childcare deserts,” with limited to no access to quality care (Child Care Aware of America, 2017). Families in these communities have difficulty just finding licensed childcare options, and do not have the privilege of being able to look for or compare quality. Further, unconventional work hours (e.g., shift work), which many low-income jobs tend to have, also create challenges for families needing childcare because the vast majority of programs do not provide services outside of the typical from 6:00 am to 6:30 pm range.

Quality of childcare. A key to providing a quality service in any industry is the retention of quality staff. This is no different in the early childcare industry. Research examining quality early childhood programs has found the rate of staff turnover to be a strong predictor of program quality, with high turnover associated with lower-quality programs (Cassidy, Lower, Kinter-Duffy, Hedge, & Shim, 2011; Mims, Scott-Little, Lower, Cassidy, & Hestenes, 2008).

In the United States, the turnover rate for childcare professionals is estimated to be between 30% and 40% (Baumgartner, Carson, Apavaloaie, & Tsouloupas, 2009; Whitebook & Sakai, 2003).

Although multiple factors influence retention, low compensation has been found to be the most salient factor leading to high turnover rates in the childcare industry (Cornille, Mullis, Mullis, & Shriner, 2006). In 2016, the median annual salary for a childcare worker in the United States was \$21,170 (\$10.18/hr), and providers in some states made as little as \$17,190 (\$8.26/hr) (U.S. Department of Labor, Bureau of Labor Statistics, 2016). These wages are similar and sometimes less than other professions that require less training and education (e.g., median wage for a parking attendant is \$10.35/hr and for a fast food cook \$10.10/hr) (U.S. Department of Labor, Bureau of Labor Statistics, 2016).

Due to these low wages, highly trained childcare professionals are likely to leave their positions when other job opportunities arise. Results from a longitudinal study demonstrate that when childcare professionals leave a center, only half continue to work in the field while the other half leave the industry entirely (Whitebook & Sakai, 2003). This creates a system in which center owners and directors are using their limited resources to constantly hire and train new staff instead of providing higher wages to staff, hiring additional staff to reduce adult-child ratios, or investing in quality improvement programs.

Beyond staff retention, both structural (e.g., adult-child ratios, group size, provider education and training) and process characteristics (e.g., sensitivity and responsiveness of teachers to children's needs, quality of activities and language stimulation) inform the quality of the early educational experience. High-quality childcare promotes children's intellectual, language, and social development through responsive, sensitive, and language-rich stimulation by providers. Children who experience high-quality childcare have high scores on achievement tests, show better social skills, and exhibit fewer behavioral problems (Lamb, 1998; NICHD Early Child Care Research Network, 1998). Unfortunately, research suggests that there is great variability in the quality of programs children

participate in and that low-income mothers are more likely than high-income mothers to select childcare based on costs and location instead of quality (Fuller, Kagan, Loeb, & Chang, 2004; Li-Grining & Coley, 2006; Peyton, Jacobs, O'Brien, & Roy, 2001).

Home Visitation Interventions

Home visitation programs offer another option for intervening as these programs do not rely on children attending programs outside of the home, include family members and the home environment, and are able to intervene before the child is even born. These programs have shown promising evidence in promoting early learning in young children, improving parenting competence, and fostering positive parent-child relationships (Johnson, 2009). While these programs are limited in their reach, serving approximately 5% of children living in low-income households, support for such programs has been increasing through federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) funds, state investments, as well as grants from private and nonprofit philanthropic organizations (Innocenti, 2016; University of Pittsburg Office of Child Development, 2010). The MIECHV program provides funds to states to deliver evidence-based home visiting programs to vulnerable families; however, this funding is dependent on legislative action, and as of October 2017, funding for the federal program expired (Adirim & Supplee, 2013; Schochet, 2017). Table 1 includes a list of the MIECHV-eligible home visitation models and their evidence of effectiveness according to eight outcome domains.

Benefits of home visitation programs are that professionals and paraprofessionals provide supportive services in the family's home environment long term, that is, during the critical time of child development beginning prenatally through toddlerhood, which potentially mitigates stress and barriers in access to services and also allows the provider the opportunity to understand the client's interactions with the child and the living conditions in the context of the home and neighborhood (Azzi-Lessing, 2011). Most home visitation programs screen for adversities, such as depression, substance abuse, domestic violence, unemployment, and access to primary health care and housing and food services, though actual connection

to these resources can be difficult in disadvantaged communities due to the lack of provision of these resources (Azzi-Lessing, 2011). Furthermore, barriers are noted in engagement and retention of high-risk families that have complex needs (National Research Council & Institute of Medicine Board on Children, Youth, and Families, 1999). Many economically disadvantaged families may struggle with unstable living conditions, such as moving frequently, causing challenges in engagement and retention (Holland, Christensen, Shone, Kearney, & Kitzman, 2014; National Research Council & Institute of Medicine Board on Children, Youth, and Families, 1999). Other challenges to home visitation programs are similar to

Early Language Interventions

As language plays a critical role in a child’s cognitive and social development by providing a means of communication, methods of obtaining knowledge, and a way to foster future inquiry, specific interventions supporting early language are also utilized to improve outcomes for at-risk children (Song, Spier, & Tamis-Lemonda, 2014). Studies have shown that frequency of reading to a child regularly and often as well as having accessible children’s books in the household were associated with positive child outcomes such as early academic success (Pati, Hashim, Brown, Fiks, & Forrest, 2011; Zuckerman & Augustyn, 2011). Research in early language has shown that targeted

Table 1. MIECHV-Eligible Home Visitation Models: Evidence of Effectiveness.

	Eight Outcome Domains							
	Child development and school readiness	Child health	Family economic self-sufficiency	Linkages and referrals	Maternal health	Positive parenting practices	Reductions in child maltreatment	Reductions in juvenile delinquency, family violence, and crime
Attachment and Biobehavioral Catch-Up (ABC) Intervention	YES	YES	NM	NM	NM	YES	NM	NM
Child First	YES	NM	NM	YES	YES	NM	YES	NM
Early Head Start -Home Visiting (EHS-HV)	YES	NO	YES	YES	NO	YES	YES	NM
Early Intervention Program for Adolescent Mothers	NM	YES	YES	NM	NO	NO	NM	NM
Early Start (New Zealand)	YES	YES	NO	NM	NO	YES	YES	NO
Family Check-Up® For Children	YES	NM	NM	NM	YES	YES	NM	NM
Family Connects	NM	YES	NM	YES	YES	YES	NM	NM
Family Spirit®	YES	NM	NM	NM	YES	YES	NM	NM
Health Access Nurturing Development Services (HANDS) Program	NM	YES	YES	NM	YES	NM	YES	NM
Healthy Beginnings	YES	YES	NM	NM	YES	YES	NM	NM
Healthy Families America (HFA)®	YES	YES	YES	YES	YES	YES	YES	YES
Home Instruction for Parents of Preschool Youngsters (HIPPY)	YES	NM	NM	NM	NM	YES	NM	NM
Maternal Early Childhood Sustained Home-Visiting Program (MECSH)	NM	YES	NM	NM	YES	YES	NM	NM
Minding the Baby®	NM	YES	NM	NM	YES	NO	NO	NM
Nurse Family Partnership (NFP)®	YES	YES	YES	NO	YES	YES	YES	YES
Parents as Teachers (PAT)®	YES	NO	YES	NM	NO	YES	YES	NM
Play and Learning Strategies (PALS)	YES	NM	NM	NM	NM	YES	NM	NM
SafeCare®	NM	NM	NO	YES	NO	NM	YES	NO

Note: “YES” indicates that the program has shown favorable effects either confirmed through primary or secondary outcome measures in this domain; “NO” indicates that no statistically significant effects or unfavorable or ambiguous effects were measured through primary or secondary outcomes measures in this domain; “NM” indicates that outcomes were not measured in this domain.

Source: Source: U.S. Department of Health and Human Services, Administration for Children and Families (n.d.). Retrieved from <https://homvee.acf.hhs.gov/outcomes.aspx>

those of childcare programs, including staff turnover due to high caseloads and the stressful nature of the work. Retention of staff is vital as the supportive relationship that is fostered between the home visitor and the parent is key for program efficacy.

interventions can significantly increase interactions between the parent and the child, the amount of vocalization response of the child toward the parent, as well as the diversity and breadth of the parents’ vocabulary toward the child (Leffel & Suskind, 2013).

Disadvantaged families have fewer resources and may struggle to provide cognitively stimulating books and toys within the home. Additionally these families may struggle with employment and housing security and so may not have the time or ability to invest in their young child's early education (Dickinson, McCabe, & Anastasopoulos, 2003). Programs implemented during primary care well-child visits, such as Reach Out and Read, attempt to address these challenges by modeling reading strategies and giving the family a developmentally appropriate book to take home to engage in shared book reading (Zuckerman, 2009). Reach Out and Read serves approximately 25% of low-income families and has shown evidence for increased shared reading and increased language development in children. Other studies have demonstrated that despite economic difficulty, the frequency of maternal language targeted toward the child is related to significant gains in the child's language ability (Hoff, 2003; Song et al., 2014). Another study found that successful parenting interventions, such as parental engagement in shared book reading, promote the transfer of cognitive skills from parent to child, independent of the parent's cognitive ability, education, and social class (Byford, Kuh, & Richards, 2012).

These demonstrate that despite socioeconomic disadvantage, the importance of promoting consistent and responsive parenting in early childhood cannot be understated for optimal child social and cognitive development. However, providing a rich home language environment is dependent on parental behavior. Studies have shown that parental beliefs and knowledge of child development mediate associations between parental directed speech toward the child and socioeconomic status (Rowe, 2008). As with interventions in the home and in childcare settings, if these interventions do not address adversities and the environments that families are living in, they will be limited in their scope to realize long-term improvements in child outcomes.

Sustained Improvements in Population-Level Child Outcomes

Currently, there is no silver bullet intervention that will promote optimal population-level child

development. As noted, gains can be made with socially disadvantaged children through promising home and early education interventions; however, unless improvements are made in the environments in which children live, and in the inequality and adversities they face, significant population-level changes in child outcomes will not be attained. Interventions focused on counseling and education are designed to help individuals rather than populations (Frieden, 2010). Often these interventions are the focus of resources, and even programs that show strong evidence of effectiveness achieve limited population impacts. Interventions that target socioeconomic factors at a population level have the greatest potential to improve outcomes; however, for their success, they need to be supported by the political will.

Policy and partnerships between government and community agencies, including health care providers, churches, and schools, are essential to address poverty and inequality. Focusing on early childhood is vital to begin to decrease inequality in our society. Programs that support families with young children such as paid parental leave and increased subsidies for childcare have been shown to have health and developmental benefits to children (Adema, Clarke, & Frey, 2016). Tied to increased childcare subsidies for children are increased reimbursements for childcare centers serving low-income children receiving subsidies. This increase would allow centers to increase pay for staff, which would help decrease turnover, and invest in quality improvement initiatives. For example, quality rating and improvement systems (QRIS) are assisting states across the country to incentivize and boost quality in early education programs. Although standards vary by state, all QRIS provide financial incentive, with many including increased reimbursement rates, to programs that meet or exceed specific quality standards (National Center on Early Childhood Quality Assurance, 2017). Evaluations of these programs, however, have found that there is a need to increase the reimbursement rates currently provided because the rates are not always enough to support and sustain high-quality programs (e.g., Ashby & Phebus, 2013; Liam & Muenchow, 2009).

Policies to decrease the inequality gap should address

the uneven distribution of wealth and resources across society (Marmot & Bell, 2012). A potential policy to address this would be to increase the federal minimum wage. In the past 40 years, wages for average wage workers have minimally increased compared with massive increases for the top earners wages, causing increasingly greater income inequality (Saez & Zucman, 2014). Another instance of an intervention to reduce inequality is providing supplemental earnings. Morris, Duncan, and Rodrigues (2011) found that supplementing the income of mothers with young children produced higher levels of student achievement compared with students of mothers who received no additional earnings while participating in a welfare to work program. These examples highlight a few population-level policies and programs aimed at reducing poverty and inequality; many others have been proposed and are being discussed in the current landscape.

Conclusion

Research demonstrates that intervening early in childhood is critical to preventing developmental delays, promoting optimal development, and ensuring a healthy and productive future workforce. As discussed, a multitude of challenges may occur when intervening with caregivers of young children in the home and early childcare environments. Some of these challenges can be addressed through policy and societal changes. Even

though changing policy will take time, the benefits from these changes will be observed over the long term. While there rightfully is an emphasis on investing in early childhood, most important is the need to fully address the challenges faced by families, educators, and interventionists alike. If not, the benefits will not be realized at a population level. Comprehensive and integrated approaches that include effective interventions to enhance the home and early education environment, supported by policies and investments that mitigate inequality and adversity, are therefore critical to realizing sustained improvements in child outcomes.

About the Authors

Cary M. Cain, MPH, RN, Research Associate, Baylor College of Medicine, Department of Pediatrics at Texas Children's Hospital, is a Robert Wood Johnson Foundation Future of Nursing Scholar at the University of Texas Health Science Center at Houston. She is a registered nurse with a master of public health degree. Her research interests include the prevention of pediatric adversity, injury, and mortality through strengthening community and family systems. For details regarding this article, contact: Cary.Cain@bcm.edu; 832-824-0252

Bethanie S. Van Horne, DrPH, MPH, is Assistant Professor and Director of Research for the Section of Public Health Pediatrics. Her research and programmatic work have been focused broadly around improving child and family well-being and have covered an array of topics, including identifying the risk and predictors of child maltreatment, assessing trends in pediatric hospitalizations across Texas, conducting community needs assessments, developing and evaluating teacher and parent education programs, and bringing to scale research-based interventions that support young children.



Current Challenges in Addressing the Realities of Poverty and Inequality in Families With Young Children: A Call for Both Policy and Intervention

- Aber, J. L., Bennett, N. G., Conley, D. C., & Li, J. (1997). The effects of poverty on child health and development. *Annual Review of Public Health, 18*(1), 463–483.
- Adema, W., Clarke, C., & Frey, V. (2016). Paid parental leave and other supports for parents with young children: The United States in international comparison. *International Social Security Review, 69*(2), 29–51.
- Adirim, T., & Supplee, L. (2013). Overview of the federal home visiting program. *Pediatrics, 132*(Supplement 2), S59–64.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D. ... Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience, 256*(3), 174–186.
- Ashby, D. T., & Phebus, T. (2013). 2013 children's legislative briefing book. Nevada Institute for Children's Research and Policy, Children's Advocacy Alliance. Available at: https://digitalscholarship.unlv.edu/nicrp_reports/17
- Azzi-Lessing, L. (2011). Home visitation programs: Critical issues and future directions. *Early Childhood Research Quarterly, 26*(4), 387–398.
- Baumgartner, J. J., Carson, R. L., Apavaloaie, L., & Tsouloupas, C. (2009). Uncovering common stressful factors and coping strategies among childcare providers. *Child & Youth Care Forum, 38*(5), 239–251.
- Byford, M., Kuh, D., & Richards, M. (2012). Parenting practices and intergenerational associations in cognitive ability. *International Journal of Epidemiology, 41*(1), 263–272.
- Cassidy, D. J., Lower, J. K., Kinter-Duffy, V. L., Hedge, A. V., & Shim, J. (2011). The day-to-day reality of teacher turnover in preschool classrooms: An analysis of classroom context and teacher, director, and parent perspectives. *Journal of Research in Childhood Education, 25*(1), 1–23.
- Chien, N. (2015, November). Estimates of child care eligibility and receipt for fiscal year 2012. ASPE Issue Brief. Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Office of Human Services Policy.
- Child Care Aware™ of America. (2016). *Parents and the high cost of child care: 2016*. Arlington, VA: Author. Available from <https://usa.childcareaware.org/advocacy-public-policy/resources/research/costofcare/>
- Child Care Aware™ of America. (2017). *Checking in: A snapshot of the child care landscape-- 2017 state fact sheets*. Arlington, VA: Author. Available from <https://usa.childcareaware.org/advocacy-public-policy/resources/research/statefactsheets/>
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. (1966). *Equality of educational opportunity (COLEMAN) study (EEOS)*. Washington, DC: ICPSR. Available from www.icpsr.umich.edu/icpsrweb/ICPSR/studies/6389
- Copple, C. (2012). *Growing minds: Building strong cognitive foundations in early childhood*. Washington, DC: NAEYC.
- Cornille, T. A., Mullis, R. L., Mullis, A. K., & Shriner, M. (2006). An examination of childcare teachers in for profit and non-profit childcare centers. *Early Child Development and Care, 176*(6), 631–641.

ADVISOR

- Currie, J., & Thomas, D. (1995). Does Head Start make a difference? *American Economic Review*, 85(3), 341–364.
- Dickinson, D. K., McCabe, A., & Anastasopoulos, L. (2003). A framework for examining book reading in early childhood classrooms. In A. van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.), *On reading books to children: Parents and teachers* (pp. 95–113). Mahwah, NJ: Earlbaum.
- Doyle, O., Harmon, C. P., Heckman, J. J., & Tremblay, R. E. (2009). Investing in early human development: Timing and economic efficiency. *Economics and Human Biology*, 7(1), 1–6.
- Egeland, B., Carlson, E., Sroufe, L. A., Egeland, B., Aberly, B., Egeland, B. ... Sroufe, L. A. (1993). Resilience as process. *Development and Psychopathology*, 5(4), 517.
- Emerson, E., & Parish, S. (2010). Intellectual disability and poverty: Introduction to the special section [Editorial]. *Journal of Intellectual & Developmental Disability*, 35(4), 221–223.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V. ... Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245–258.
- Flouri, E., Midouhas, E., Joshi, H., & Tzavidis, N. (2015). Emotional and behavioural resilience to multiple risk exposure in early life: The role of parenting. *European Child & Adolescent Psychiatry*, 24(7), 745–755.
- Frieden, T. R. (2010). A framework for public health action: The health impact pyramid. *American Journal of Public Health*, 100(4), 590–595.
- Fuller, B., Kagan, S. L., Loeb, S., & Chang, Y. (2004). Child care quality: Centers and home settings that serve poor families. *Early Childhood Research Quarterly*, 19(4), 505–527.
- Halle, T., Forry, N., Hair, E., Perper, K., Wandner, L., Wessel, J. ... Schultz, T. (2009). *Disparities in early learning and development: Lessons from the early childhood longitudinal study--birth cohort (ECLS-B)*. Washington, DC: Child Trends. Available at: <https://www.childtrends.org/wp-content/uploads/2013/05/2009-52DisparitiesELExecSumm.pdf>
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Paul H. Brookes Publishing.
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368–1378.
- Holland, M. L., Christensen, J. J., Shone, L. P., Kearney, M. H., & Kitzman, H. J. (2014). Women's reasons for attrition from a nurse home visiting program. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 43(1), 61–70.
- Horm, D., Norris, D., Perry, D., Chazan-Cohen, R., & Halle, T. (2016). Developmental foundations of school readiness for infants and toddlers: A research to practice report (OPRE Report # 2016-07). Washington, DC: U.S. Department of Human Services, Administration for Children and Families, Office of Planning, Research and Evaluation.
- Hurt, H., & Betancourt, L. M. (2017). Turning 1 year of age in a low socioeconomic environment: A portrait of disadvantage. *Journal of Developmental & Behavioral Pediatrics*, 38(7), 493–500.
- Innocenti, M. S. (2016). Considerations on the implementation, innovation, and improvement of evidence-based home visiting programs. In Lori Roggman & Nancy Cardia (Eds.), *Home visitation programs* (pp. 135–153). Switzerland: Springer International Publishing.
- Johnson, K. (2009). *State-based home visiting: Strengthening programs through state leadership*. New York: National Center for Children in Poverty.
- Kalil, A., Ryan, R., & Chor, E. (2014). Time investments in children across family structures. *The Annals of the American Academy of Political and Social Science*, 654(1), 150–168.
- Kalil, A., Ziol-Guest, K. M., Ryan, R. M., & Markowitz, A. J. (2016). Changes in income-based gaps in parent activities with young children from 1988 to 2012. *AERA Open*, 2(3), 1–17.
- Kids Count Data Center. (2017a). *Children in poverty*. Retrieved from <http://datacenter.kidscount.org/>

- Kids Count Data Center. (2017b). *Children in single-parent families*. Retrieved from <http://datacenter.kidscount.org/>
- Lamb, M. E. (1998). Nonparental child care: Context, quality, correlates, and consequences. In W. Damon, I. E. Sigel, and K. A. Renninger (Eds.), *Handbook of child psychology. Vol. 4: Child psychology in practice* (pp. 73–133). New York: Wiley.
- Leffel, K., & Suskind, D. (2013). Parent-directed approaches to enrich the early language environments of children living in poverty. *Seminars in Speech and Language, 34*(4), 267–277.
- Liam, I., & Muenchow, S. (2009). *First 5 power of preschool: Lessons from an experiment in tiered reimbursement*. [Policy brief]. Palo Alto, CA: American Institutes for Research.
- Li-Grining, C. P., & Coley, R. L. (2006). Child care experiences in low-income communities: Developmental quality and maternal views. *Early Childhood Research Quarterly, 21*(2), 125–141.
- Luby, J. L., Barch, D. M., Belden, A., Gaffrey, M. S., Tillman, R., Babb, C. ... Botteron, K. N. (2012). Maternal support in early childhood predicts larger hippocampal volumes at school age. *Proceedings of the National Academy of Sciences of the United States of America, 109*(8), 2854–2859.
- Luby, J. L., & Rogers, C. (2013). Maternal support and brain development: Neuroscience validation for the importance of early caregiving relationships. *Zero to Three, 34*(1), 12–15.
- Marmot, M., & Bell, R. (2012). Fair society, healthy lives. *Public Health, 126*, S4–S10.
- Mather, M. (2010, May). *U.S. children in single-mother families* [Data brief]. Washington, DC: Population Reference Bureau.
- McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61*(2), 311–346.
- Merz, E. C., Zucker, T. A., Landry, S. H., Williams, J. M., Assel, M., Taylor, H. B. ... de Villiers, J. (2015). Parenting predictors of cognitive skills and emotion knowledge in socioeconomically disadvantaged preschoolers. *Journal of Experimental Child Psychology, 132*, 14–31.
- Mims, S. U., Scott-Little, C., Lower, J. K., Cassidy, D. J., & Hestenes, L. L. (2008). Education level and stability as it relates to early childhood classroom quality: A survey of early childhood program directors and teachers. *Journal of Research in Childhood Education, 23*(2), 227–237.
- Morris, P. A., Duncan, G. J., & Rodrigues, C. (2011). Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments. *Developmental Psychology, 47*, 1263–1279.
- National Center on Early Childhood Quality Assurance. (2017). *QRIS Resource Guide: About QRIS*. Retrieved from <https://qrisguide.acf.hhs.gov/index.cfm?do=qrisabout>
- National Research Council, & Institute of Medicine Board on Children, Youth, and Families. (1999). Challenges faced by home visiting programs. In N. G. Margie & D. A. Phillips (Eds.), *Revisiting home visiting: Summary of a workshop* (pp. 7–11). Washington, DC: National Academies Press (US).
- NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*(4), 1145–1170.
- Offord, D. R., & Lipman, E. L. (1999). Lessening the impact of poverty on children. *Paediatrics & Child Health, 4*(8), 526–529.
- Pati, S., Hashim, K., Brown, B., Fiks, A. G., & Forrest, C. B. (2011). Early identification of young children at risk for poor academic achievement: Preliminary development of a parent-support prediction tool. *BMC Health Services Research, 11*, 197.
- Peterson, B. S., Rauh, V. A., Bansal, R., Hao, X., Toth, Z., Nati, G. ... Perera, F. (2015). Effects of prenatal exposure to air pollutants (polycyclic aromatic hydrocarbons) on the development of brain white matter, cognition, and behavior in later childhood. *JAMA Psychiatry, 72*(6), 531.
- Peyton, V., Jacobs, A., O'Brien, M., & Roy, C. (2001). Reasons for choosing child care: Associations with family factors, quality, and satisfaction. *Early Childhood Research Quarterly, 16*(2), 191–208.

ADVISOR

- Ramey, C. T., & Ramey, S. L. (1998). Early intervention and early experience. *American Psychologist*, 53(2), 109–120.
- Rearson, S. F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. In G. J. Duncan & R. J. Murnane (Eds.), *Wither opportunity? Rising inequality, schools, and children's life chances* (pp. 91–116). New York: Russell Sage Foundation.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, 128(2), 330–66.
- Robert Wood Johnson Foundation. (2013). *The truth about ACEs infographic*. Retrieved from <http://www.rwjf.org/en/library/infographics/the-truth-about-aces.html>
- Rowe, M. L. (2008). Child-directed speech: Relation to socioeconomic status, knowledge of child development, and child vocabulary skill. *Journal of Child Language*, 35(1), 185–205.
- Saez, E., & Zucman, G. (2014). *Wealth inequality in the United States since 1913: Evidence from capitalized income tax data* (No. 20625). Cambridge, MA: National Bureau of Economic Research.
- Schochet, L. (2017). *Congress just let a critical home visiting program for vulnerable children and families expire*. Retrieved from <https://www.americanprogress.org/issues/early-childhood/news/2017/10/04/440294/congress-just-let-critical-home-visiting-program-vulnerable-children-families-expire/>
- Schor, E. L., Billingsley, M. M., Golden, A. L., McMillan, J. A., Meloy, L. D., Pendarvis, B. C. ... Milazzo, C. (2003). Report of the task force on the family. *Pediatrics*, 111(6), 1541–1571.
- Shonkoff, J. P. (2012). Leveraging the biology of adversity to address the roots of disparities in health and development. *Proceedings of the National Academy of Sciences of the United States of America*, 109 (Supplement 2), 17302–17307.
- Shonkoff, J. P., Garner, A. S., & Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, Section on Dependent and Developmental Pediatrics. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), e232–e246.
- Shonkoff, J. P., & Phillips, D. A. (Eds.) (2000). *From neurons to neighborhoods: The science of early childhood development*. Sponsored by the National Research Council and Institute of Medicine, Committee on Integration the Science of Early Childhood Development. Washington, DC: National Academy Press.
- Song, L., Spier, E. T., & Tamis-Lemonda, C. S. (2014). Reciprocal influences between maternal language and children's language and cognitive development in low-income families. *Journal of Child Language*, 41(2), 305–326.
- University of Pittsburg Office of Child Development. (2010). Revisiting home visitation: The promise and limitations of home-visiting programs. *Developments*, 24(1), 5–10.
- U.S. Department of Health and Human Services, Administration for Children and Families. (n.d.). *Home visiting evidence of effectiveness*. Retrieved from <https://homvee.acf.hhs.gov/outcomes.aspx>
- U.S. Department of Health and Human Services, Administration for Children and Families. (2014). *Fundamentals of CCDF administration*. Retrieved from https://www.acf.hhs.gov/sites/default/files/occ/fundamentals_of_ccdf_administration.pdf
- U.S. Department of Labor, Bureau of Labor Statistics. (2016). *Occupational employment and wages: Childcare workers*. Retrieved from <https://www.bls.gov/oes/current/oes399011.htm#st>
- Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Prediction of school outcomes based on early language production and socioeconomic factors. *Child Development*, 65(2), 606–621.
- Whitebook, M., & Sakai, L. (2003). Turnover begets turnover: An examination of job and occupational instability among child care center staff. *Early Childhood Research Quarterly*, 18(3), 273–293.
- Wood, D. (2003). Effect of child and family poverty on child health in the United States. *Pediatrics*, 112(3), 707–711.
- Zuckerman, B. (2009). Promoting early literacy in pediatric practice: Twenty years of Reach Out and Read. *Pediatrics*, 124(6), 1660–1665.
- Zuckerman, B., & Augustyn, M. (2011). Books and reading: Evidence-based standard of care whose time has come. *Academic Pediatrics*, 11(1), 11–17.