CHILDCARE

Addressing the need for affordable, high-quality early childhood care and education for all in the United States

By Taryn Morrissey, American University

Overview

In 2017–2018, most children in the United States under 6 years of age—68 percent of those in single-mother households and 57 percent in married-couple households—lived in homes in which all parents were employed.[1] Most of these families require nonparental early care and education, such as childcare centers, preschools, family childcare homes, or informal arrangements with relatives or neighbors, to care for their children while at work. In a typical week in 2011, the most recent year for which complete data are available from the U.S. Census Bureau, 12.5 million of the 20.4 million children under the age of 5 living in the United States (61 percent) attended some type of regular childcare arrangement.[2]

Unfortunately, on average, the early care and education settings attended by many young children, particularly low-income children or children of color, provide quality at levels too low to adequately promote children's learning and development.[3] This exacerbates socioeconomic and racial and ethnic inequalities. At the same time, in most regions of the country, families with young children are spending more on childcare than they are on housing, food, or healthcare.[4]

In this essay, I argue that greater policy attention to early childcare and education is warranted for three reasons:

- High-quality early care and education promotes children's development and learning, and narrows socioeconomic and racial/ethnic inequalities.

- Reliable, affordable childcare promotes parental employment and family self-sufficiency.

- Early care and education is a necessary component of the economic infrastructure.

I then provide the research underlying these three statements, and follow with a discussion of several policy solutions to address the current problems of affordability, quality, and supply of early care and education in the United States. The overwhelming evidence shows that more public investment is needed to help ease the cost burden for families and ensure that a trained, stable workforce has adequate compensation. A universal early care and education plan, particularly one with a sliding income scale to provide progressive benefits, may not pay for itself in the short term, but will very likely do so in the long term by boosting broad-based U.S. economic growth and stability while narrowing economic inequality.

Key Takeaways

THE EVIDENCE

- High-quality early care and education promotes children's development and learning, and narrows socioeconomic, racial, and ethnic inequalities while promoting parental employment and family self-sufficiency, yet most existing programs in the United States are expensive and difficult for parents to juggle alongside their jobs.

- Existing state and local paid family leave programs help parents manage their own health and their newborns' needs while maintaining their jobs and a basic income, but the transition to early care and education is often tumultuous for both parents and children, given the dearth of high-quality, affordable options.

THE SOLUTIONS

- Early care and education is a necessary component of the U.S. economic infrastructure. Following periods of paid leave and preceding preschool, families face gaps in affordable, high-quality, and stable early care and education arrangements that match their working hours. Expanding early care and education options can narrow pervasive social and economic inequalities and lead to greater U.S. economic growth.

High-quality early care and education promotes children's development and learning and narrows inequality

Early childhood, especially the first 3 years of life, constitutes a sensitive period of the life course, one during which caregiver warmth, responsiveness, and developmentally appropriate stimulation are vital for development.[5] Experiences during early childhood—whether positive, such as language exposure, or negative, such as high and chronic levels of stress or deprivation—have lasting effects.[6] Research demonstrates that socioeconomic disparities in cognitive skills and physical development are apparent in infancy.[7]

Over the past five decades, a wealth of research has examined how early care and education affects children's development. Most studies find that the majority of the intensive, high-quality, at-scale model programs promote children's academic school readiness in the short term. These include the Abecedarian project (studying a set of children born between 1972 and 1977 into their adult years), the Perry Preschool project (studying of a select group of children born between 1962 and 1967), the Infant Health and Development Program (a 1980s program that studied low birth-weight children in their first 3 years), and longstanding federal at-scale early care and education programs such as Head Start, state pre-Kindergarten programs, and high-quality center-based programs.[8] Effects are generally strongest for disadvantaged children, suggesting that early care and education may help to narrow socioeconomic, racial, and ethnic disparities in achievement.[9]

Among the early care and education programs in existence long enough to have data on long-term effects, research finds substantial and lasting benefits for educational and economic outcomes, including higher rates of high school completion, college attendance, and earnings, and reduced criminal activity and public assistance reliance into adulthood.[10] There also is emerging evidence for intergenerational benefits.[11] Yet the research is somewhat mixed for the mid-term effects of early care and education programs. Research finds benefits of participation for reduced grade retention, or repeating a grade in school.[12] The short-term benefits on test scores, however, appear to "fade out" or converge with children who did not attend early care and education programs as they age.[13] But some research suggests that may be due to the quality of the schools attended after early childhood.[14]

A largely separate body of research examines the health effects of early care and education. Studies find that the initial entrance of young children into group care is associated with a short-term increase in the incidence of communicable diseases.[15] But there are substantial and lasting benefits of early care and education participation for health, including increased on-time immunization rates, early screening rates, improved cardiovascular and metabolic health, and reduced smoking.[16]

Reliable, affordable childcare promotes parental employment and family self-sufficiency

Early care and education provides a context for child development, as well as temporary relief to parents for childcare, allowing them to work. Indeed, increased access to affordable childcare increases parents' labor force participation, particularly among single mothers. A recent review of the labor effects of childcare estimates that a 10 percent decrease in childcare costs would lead to a 0.25 percent to 1.25 percent increase in parental labor force participation.[17] Research finds that public preschool programs, which typically offer part-day, school-year programming, have some but potentially limited effects on parental employment.[18] But full-day, full-year early care and education—particularly for infants and toddlers for whom care is expensive and hard to find, and who are less likely to attend center-based care (See Figure 1)—would likely have larger effects on parental labor force participation.[19]

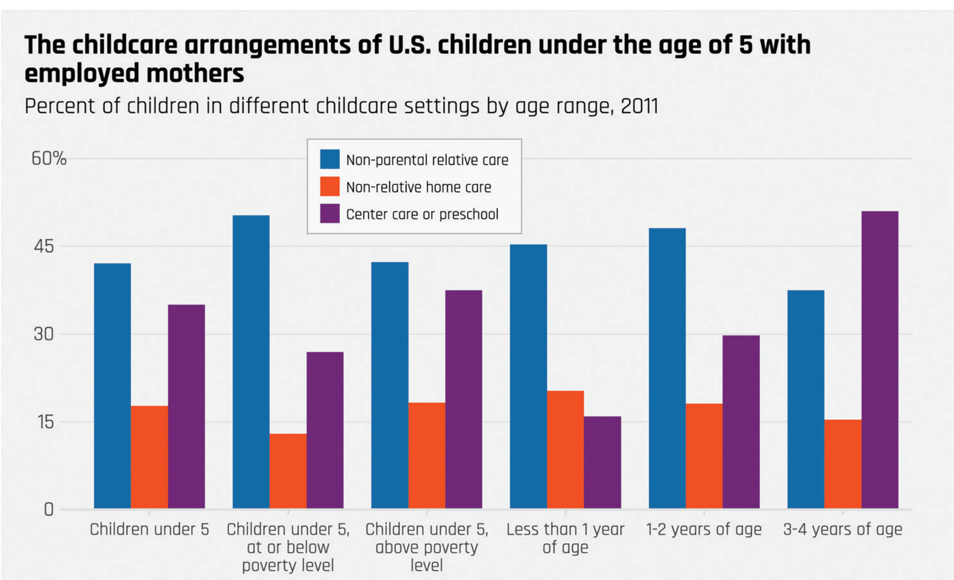

FIGURE 1

...full-day, full-year early care and education would likely have larger effects on parental labor force participation.

Source: Lynda Laughlin, "Who's Minding the Kids? Child Care Arrangements" (U.S. Census Bureau, 2013), 2011 Survey of Income and Program Participation data, available at https://www.census.gov/prod/2013pubs/p70-135.pdf.

Early care and education is a necessary economic infrastructure component

Childcare can be considered an infrastructure component akin to transportation. Without reliable, affordable sources, workers cannot regularly get to work or stay there. In the short term, early care and education settings support the productivity of two types of workers: employed parents and childcare workers. Research by University of Chicago economist and Nobel Laureate James Heckman and others suggests that many early childhood programs pay for themselves before children begin kindergarten via increased maternal employment, which generates both household income and tax revenue.[20] Further, research from the early 2000s suggests that investments in childcare have strong local economic development effects, or multiplier effects, because much of those dollars are spent on childcare worker wages that they, in turn, spend locally.[21]

In the long term, early care and education supports the preparedness and skills development of the future workforce of the country. Benefit-cost analyses of several intensive model programs and public early care and education programs indicate that the benefits—such as improved educational, economic, and health outcomes, and reduced criminal activity and receipt of public assistance—outweigh the initial program costs, demonstrating positive returns for participants, as well as the public.[22]

Barriers in accessing the promise of early care and education

Unfortunately, families with young children today face barriers in accessing and paying for the opportunities offered by early care and education. High-quality early care and education is expensive and hard to find, particularly for infants and toddlers.[23] Families with young children spend about 10 percent of their incomes on childcare expenses, but families in poverty—families below 100 percent of the Federal Poverty Level of about $12,000 per year for a family of three—spend 30 percent.[24] These expenses represent families' actual expenses at a mix of regulated centers and homes and informal lower-cost arrangements with relatives, not necessarily what they may choose to spend if more options were available.

In 2017, infant childcare at centers or licensed homes cost an average of $9,000 to $12,000 per year across the country, more than public college tuition in most states.[25] These high childcare costs accrue during a period when parents are at the lowest earning years of their careers and when the financing mechanisms of grants and low-interest loans are unavailable.[26] The public programs that exist to help families access early care and education—namely the Early Head Start/Head Start program and childcare subsidies provided under the federal and state Child Care and Development Block Grant program—serve a small fraction of those eligible. In 2016–2017, 35 percent of 3- to 5-year-old children in poverty attended Head Start, and 10 percent of children under age 3 in poverty attended Early Head Start.[27] In 2015, of the 13.5 million children eligible for childcare subsidies under federal rules, only 15 percent received them.[28]

Public investments in preschool contribute to dramatic increases in participation in early learning programs in the year or two prior to children's entry into kindergarten. Whereas in 1970, about 1.09 million (27 percent) 3- to 5-year old children in the United States attended preschool, by 2016, 4.701 million (60 percent) were enrolled.29 Yet these overall rates mask disparities in attendance. While income-based gaps in enrollment in preschool narrowed in recent decades, children in low-income families continue to be less likely to attend center-based care than their higher-income peers.30 As shown in Figure 1, among children under age 5 with employed mothers, only 28 percent of those in homes under the poverty line attend center-based care, versus 39 percent of those above the poverty line. This is problematic, as center-based settings tend to provide higher-quality, more stable care, on average, than unregulated arrangements. [31]

Further, centers that low-income children attend provide lower quality care, on average, than those attended by their higher-income peers.[32] Research shows that higher-income families are enrolling children in formal early care and education programs at increasingly younger ages.[33] In 2005, for example, 22 percent of 1-year-olds from families with incomes above 200 percent of the federal poverty line (at that time, about $32,000 per year for a family of three) attended center-based settings, compared to just 11 percent of 1-year-olds from families with incomes below 200 percent of the federal poverty line.[34] Our system's reliance on private family investment in early childhood is a driver of inequality, putting children on unequal playing fields well before they walk through the doors of their kindergarten classrooms.[35]

Despite their high expense, early care and education programs should actually cost more, not less. The quality of early care and education depends on the warmth and responsiveness of teachers and caregivers and on the strength and consistency of the caregiver-child relationships, which means economies of scale do not apply to childcare in the same way as with other economic sectors. For good reason, state and local regulations set child-adult ratios and group sizes and teacher training requirements. In turn, most childcare costs are directed to labor expenses.[36]

Yet, despite parents paying as much (or more) than they can afford, childcare workers are paid little. In 2018, the median hourly wage for childcare workers was $11.17 ($23,240 per year).[37] This is considerably less than the $16.56 median hourly wage for bus drivers ($34,450 per year).[38] What's more, there are wide racial and ethnic gaps in teacher pay and benefits such as health insurance coverage or paid sick leave.[39] Many workers earn so little that they rely on public assistance. Between 2014 and 2016, more than half (53 percent) of childcare workers lived in families that participated in one or more of four public programs.[40] This compares to 21 percent in the general population.[41]

Low pay and few benefits present barriers in attracting and retaining a skilled early care and education workforce. Teacher educational qualifications and stability are associated with the quality of early childhood settings and, in turn, a wide range of children's outcomes.[42] In 2012, 25 percent of childcare centers had turnover rates of 20 percent or higher.[43] A 2018 study found that 10 percent of children in Head Start (whose teachers average lower pay than those at public preschool programs) had a teacher who left Head Start entirely during the program year, with harmful consequences for children's outcomes.[44] Adequate caregiver and teacher compensation and training is necessary for supporting quality and stability in, and augmenting the supply of, early care and education.

This lack of reliable, affordable childcare has reverberating effects for parents, employers, and the U.S. economy. Interrupting a career due to a lack of adequate childcare—something more often done by mothers—has both short- and long-term economic ramifications for families in terms of lost wages, retirement savings, and other benefits, with an estimated average reduction of 19 percent in lifetime earnings.[45] Even when maintaining labor force participation, working parents and their employers feel the economic consequences of childcare inadequacy. A 2018 survey found that workers with children under the age of 3 lose an average of 2 hours per week of work time due to childcare problems, such as leaving early or arriving late. One-quarter of respondents reported they reduced regular work hours, turned down further education or training, or turned down a job offer due to childcare problems.[46] One recent study estimated that the childcare crisis results in $57 billion in lost earnings, productivity, and revenue each year.[47]

Policy solutions

Most early care and education policies are designed for one or both of two purposes: to provide care while parents work or to promote children's readiness to enter kindergarten by supporting cognitive, social-emotional, and behavioral development. This is a false dichotomy. As detailed above, high-quality, affordable, reliable programs accomplish both purposes. Yet there are simply too few high-quality, affordable, reliable programs in the United States today, and most are out of reach for low- and middle-income families.

In order to address families' and employers' early care and education needs, policies must address the affordability, quality, and supply problems in our current system. More public investment is needed to help ease the cost burden for families and ensure that a trained, stable workforce has adequate compensation, which will promote affordability and quality. Low-income families disproportionately shoulder the economic and other burdens caused by the lack of childcare, although middle-income families are also economically squeezed during the years in which their children are young.

A universal plan, particularly one with a sliding income scale to provide progressive benefits, may not pay for itself in the short term, but will likely do so in the long term.[48] A universal plan that offers benefits such as mixed-income classrooms may have beneficial peer effects.[49] And these kinds of plans have fewer administrative barriers and stigma, and a broader base of political support.[50] Further, an analysis of the Infant Health and Development Program estimates that socioeconomic achievement gaps would be substantially narrowed from universal programs.[51] Policies should be flexible enough to meet families' diverse needs, address the overall supply of early care and education, and cope with the gaps that are particularly troublesome for families today, such as care during nonstandard hours and for children with special needs.[52]

Two examples of universal policy solutions that would improve affordability, quality, and supply are the Child Care for Working Families Act and the Universal Child Care and Early Learning Act. Both of these proposed bills would increase public investment in early care and education to limit families' out-of-pocket payments to 7 percent of family income (the threshold recommended by the U.S. Department of Health and Human Services), increase childcare worker compensation and training, and expand public preschool and the supply of childcare for infants and toddlers. The Child Care for Working Families Act does so by expanding childcare subsidies, nearly doubling the number of children eligible.[53] The Universal Child Care and Early Learning Act relies more on public provision, expanding a network of early care and education options through federal-state or federal-local partnerships.[54]

Both bills, if passed by Congress and signed into law, would lead to substantial increases in the availability of high-quality, affordable early care and education programs. An analysis of the Child Care for Working Families Act estimated that, at full implementation, the availability of new childcare subsidies and reduced childcare costs would lead to 1.6 million more parents joining the labor force, the bill would create 700,000 new jobs in the childcare sector, and pay among teachers and caregivers would increase by 26 percent.[55]

Conclusion

The recent increases in state and local paid family leave programs in a handful of states and cities are laudable and help parents manage their own health and their newborns' needs, while maintaining their jobs and a basic income.[56] Likewise, federal and state public preschool programs and Head Start serve increasing numbers of children, with 44 percent of 4-year-olds and 16 percent of 3-year-olds enrolled in public programs across the country.[57] But in the years following the (relatively brief) period of paid leave and preceding the availability of preschool, families require affordable, high-quality, stable early care and education arrangements that match their working hours.

To ignore early care and education policy means to ignore a major expense and pressing concern for families and employers across the nation. Moreover, the research shows that early care and education can promote children's cognitive and other outcomes, narrowing disparities and leading to greater economic growth.[58] Our nation's current lack of investment in early care and education—unique among our peer countries—constitutes a lost economic opportunity to enhance our global competitiveness, as well as a lost opportunity for narrowing pervasive social and economic inequalities among families today.

—***Taryn Morrissey*** *is an associate professor at the School of Public Affairs at American University.*

Endnotes

1 U.S. Bureau of Labor Statistics, "Employment Characteristics of Families Summary," *Economic News Release* (2019), available at https://www.bls.gov/news.release/famee.nro.htm.

2 Lynda Laughlin, "Who's Minding the Kids? Child Care Arrangements" (U.S. Census Bureau, 2013), available at https://www.census.gov/prod/2013pubs/p70-135.pdf.

3 S.W. Helburn and C. Howes, "Child Care Cost and Quality," *The Future of Children / Center for the Future of Children, the David and Lucile Packard Foundation* 6 (2) (1996):

62–82, available at http://www.ncbi.nlm.nih.gov/pubmed/18582984; National Survey of Early Care and Education, "Measuring Predictors of Quality in Early Care and Education Settings in the National Survey of Early Care and Education" (2015); A. Chaudry and others, *Cradle to Kindergarten: A New Plan to Combat Inequality* (New York: Russell Sage Foundation, 2017).

4 Child Care Aware of America, "The US and the High Cost of Child Care" (2018), available at https://cdn2.hubspot.net/hubfs/3957809/costofcare2018.pdf?__hstc=&__hssc=&hsCtaTracking=b4367fa6-f3b9-4e6c-acf4-b5d01d0dc570%7C94d3f065-e4fc-4250-a163-bafc3defaf20.

5 Board on Children, Youth, and Families and the National Academies of Science, *From Neurons to Neighborhoods: The Science of Early Childhood Programs*, J.P. Shonkoff and Deborah A. Phillips, eds. (Washington: National Academies Press, 2000); Douglas E. Sperry, Linda L. Sperry, and Peggy J. Miller, "Reexamining the Verbal Environments of Children From Different Socioeconomic Backgrounds," *Child Development* 00 (0) (2018): 1–16, available at https://doi.org/10.1111/cdev.13072; Ruth Feldman and Arthur I. Eidelman, "Biological and Environmental Initial Conditions Shape the Trajectories of Cognitive and Social-Emotional Development across the First Years of Life," *Developmental Science* 12 (1) (2009): 194–200, available at https://doi.org/10.1111/j.1467-7687.2008.00761.x.

6 Ariel Kalil, "Early Childhood Development." In *Delivering Equitable Growth: Strategies for the next Administration* (Washington: Washington Center for Equitable Growth, 2016), available at https://equitablegrowth.org/how-economic-inequality-affects-childrens-outcomes/; Jack P. Shonkoff and Andrew S. Garner, "The Lifelong Effects of Early Childhood Adversity and Toxic Stress," *Pediatrics* 129 (1) (2012): e232–46, available at https://doi.org/10.1542/peds.2011-2663; Jack P. Shonkoff, "Capitalizing on Advances in Science to Reduce the Health Consequences of Early Childhood Adversity," *JAMA Pediatrics* 170 (10) (2016): 1003–7, available at https://doi.org/10.1001/jamapediatrics.2016.1559; Greg J. Duncan, Katherine Magnuson, and Elizabeth Votruba-Drzal, "Moving Beyond Correlations in Assessing the Consequences of Poverty," *Annual Review of Psychology* 68 (2017): 413–34, available at https://doi.org/10.1146/annurev-psych-010416-044224; Greg J. Duncan, Kathleen M. Ziol-Guest, and Ariel Kalil, "Early-Childhood Poverty and Adult Attainment, Behavior, and Health," *Child Development* 81 (1) (2010): 306–25, available at https://doi.org/10.1111/j.1467-8624.2009.01396.x.

7 Tamara Halle and others, "Disparities in Early Learning and Development: Lessons from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B)" (Washington: Child Trends, 2009), available at http://www.childtrends.org/wp-content/uploads/2013/05/2009-52DisparitiesELExecSumm.pdf; Lindsey Hutchison, Taryn W. Morrissey, and Kimberly Burgess, "The Early Achievement and Development Gap" (Washington: U.S. Department of Health and Human Services, 2014), available at http://aspe.hhs.gov/hsp/14/achievementgap/rb_AchievementGap.pdf; Katherine Magnuson, Jane Waldfogel, and E. Washbrook, "The Development of SES Gradients in Skills during the School Years: Evidence from the United States and England." In J. Ermisch, M. Jantti, and T. Smeeding, eds., From *Parents to Children: The Intergenerational Transmission of Advantage* (New York: Russell Sage, 2012); Sean F. Reardon, "The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations." In Greg J. Duncan and Richard Murnane, eds., *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances* (New York: Russell Sage Foundation, 2011); Anne Fernald, Virginia A. Marchman, and Adriana Weisleder, "SES Differences in Language Processing Skill and Vocabulary Are Evident at 18 Months," *Developmental Science* 16 (2) (2013): 234–48, available at https://doi.org/10.1111/desc.12019.

8 Greg J Duncan and Katherine Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27 (2) (2013), available at https://doi.org/10.1257/jep.27.2.109; Deborah A. Phillips and others, "Puzzling It out: The Current State of Scientific Knowledge on Pre-Kindergarten Effects." In *The Current State of Scientific Knowledge on Pre-Kindergarten Effects* (Washington: The Brookings Institution, 2017); Hirokazu Yoshikawa and others, "Investing in Our Future: The Evidence Base on Preschool Education Investing in Our Future: The Evidence Base on Preschool Education" (Washington: Society for Research in Child Development, 2013); Pamela A. Morris and others, "New Findings on Impact Variation From the Head Start Impact Study: Informing the Scale-Up of Early Childhood Programs," *AERA Open* 4 (2) (2018): 1–16, available at https://doi.org/10.1177/2332858418769287; William T. Gormley, Deborah A. Phillips, and Sara Anderson, "The Effects of Tulsa's Pre-K Program on Middle School Student Performance," *Journal of Policy Analysis and Management* 37 (1) (2018): 63–87, available at https://doi.org/10.1002/pam.22023; Deborah A. Phillips, William T. Gormley, and Sara Anderson, "The Effects of Tulsa's CAP Head Start Program on Middle-School Academic Outcomes and Progress," *Developmental Psychology* 52 (8) (2016): 1247–61, available at

https://doi.org/10.1037/dev0000151; Christina Weiland and Hirokazu Yoshikawa, "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills," *Child Development* 84 (6) (2013): 2112–30, available at https://doi.org/10.1111/cdev.12099; D.S. Ronsaville and R.B. Hakim, "Child Outcomes When Child Care Center Classes Meet Recommended Standards for Quality. NICHD Early Child Care Research Network Child Care in the United States: Racial Differences in Compliance with Guidelines," *Am J Public Health* 89 (7) (1999): 1072–77, available at https://doi.org/10.2105/ajph.89.7.107210.2105/ajph.90.9.1436; NICHD Early Child Care Research Network, "Does Quality of Child Care Affect Child Outcomes at Age 41/2?" *Developmental Psychology* 39 (3) (2003): 451–69, available at http://ovidsp.ovid.com.proxyau.wrlc.org/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=ovftf&AN=00063061-200305000-00009; National Institute of Child Health and Human Development Early Child Care Rearch Network, "Child Care Effect Sizes for the NICHD Study of Early Child Care and Youth Development," *American Psychologist* 61 (2006): 99–116.

9 William T. Gormley, "The Effects of Oklahoma's Pre-K Program on Hispanic Children," *Social Science Quarterly* 89 (4) (2008); Greg J Duncan and Aaron J. Sojourner, "Can Intensive Early Childhood Intervention Programs Eliminate Income-Based Cognitive and Achievement Gaps?" *Journal of Human Resources* 48 (4) (2013): 945–68; Phillips and others, "Puzzling It out: The Current State of Scientific Knowledge on Pre-Kindergarten Effects"; Katherine Magnuson and Greg J. Duncan, "Can Early Childhood Interventions Decrease Inequality of Economic Opportunity?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2 (2) (2017): 123, available at https://doi.org/10.7758/rsf.2016.2.2.05; Daphna Bassok, "Do Black and Hispanic Children Benefit More from Preschool? Understanding Differences in Preschool Effects across Racial Groups," *Child Development* 81 (6) (2010): 1828–45, available at https://doi.org/10.1111/j.1467-8624.2010.01513.x; Yoshikawa and others, "Investing in Our Future: The Evidence Base on Preschool Education"; Taryn W. Morrissey, Lindsey Hutchison, and Kimberly Burgess, "The Short- and Long-Term Impacts of Large Public Early Care and Education Programs" (Washington: U.S. Department of Health and Human Services, 2014), available at http://aspe.hhs.gov/hsp/14/longtermimpact/rb_longTermImpact.pdf; Marianne P. Bitler and others, "Experimental Evidence on Distributional Effects of Head Start." Working Paper (National Bureau of Economic Research, 2016), available at http://www.nber.org/papers/w20434.pdf.

10 David Deming, "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start," *American Economic Journal: Applied Economics* 1 (3) (2009): 111–34, available at https://doi.org/10.1257/app.1.3.111; Rucker C. Johnson, "The Health Returns of Education Policies from Preschool to High School and Beyond," *American Economic Review: Papers and Proceedings* 100 (2) (2010): 188–94; E. I. Knudsen and others, "Economic, Neurobiological, and Behavioral Perspectives on Building America's Future Workforce," *Proceedings of the National Academy of Sciences* 103 (27) (2006): 10155–62; Flavio Cunha and James J. Heckman, "The Technology of Skill Formation," *American Economic Review* 97 (2) (2007): 31–47, available at https://doi.org/10.1257/aer.97.2.31; Jens Ludwig and Deborah A. Phillips, "Long-Term Effects of Head Start on Low-Income Children," *Annals Of The New York Academy Of Sciences* 1136 (1) (2008): 257–68, available at https://doi.org/10.1196/annals.1425.005; Eliana Garces, Duncan Thomas, and Janet Currie, "Longer-Term Effects of Head Start," *American Economic Review* 92 (4) (2002): 999–1012, available at https://search.proquest.com/openview/466c6163e16cd99af4b4a38f4e0442e3/1.pdf?pq-origsite=gscholar&cbl=42182.

11 James Heckman and Ganesh Karapakula, "Intergenerational and Intragenerational Externalities of the Perry Preschool Project." Working Paper (National Bureau of Economic Research, 2019), available at https://doi.org/10.3386/w25889; Andrew Barr and Chloe R. Gibbs, "Breaking the Cycle? The Intergenerational Effects of Head Start" (2017).

12 Dana Charles Mccoy and others, "Impacts of Early Childhood Education on Medium- and Long-Term Educational Outcomes," *Educational Researcher* 46 (8) (2017), available at https://doi.org/10.3102/0013189X17737739; Mariana Zerpa, "Short and Medium Run Impacts of Preschool Education: Evidence from State Pre-K Programs" (Washington: Washington Center for Equitable Growth, 2018).

13 Yoshikawa and others, "Investing in Our Future: The Evidence Base on Preschool Education"; Arya Ansari, "The Persistence of Preschool Effects From Early Childhood," *Journal of Educational Psychology* 110 (7) (2018): 952–73; Greg J. Duncan and Katherine Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27 (2) (2013): 109–32, available at https://doi.org/10.1257/jep.27.2.109.

14 Janet Currie and Duncan Thomas, "School Quality and the Longer-Term Effects of Head Start," *The Journal of Human Resources* 35 (4) (2000): 755, available at https://doi.org/10.2307/146372; Arya Ansari and Robert Pianta, "The Role of Elementary School Quality in the Persistence of Preschool Effects," *Children and Youth Services Review* 86 (2018):

120–27, available at https://doi.org/10.1016/j.childyouth.2018.01.025.

15 Robert H. Bradley and NICHD Early Child Care Research Network, "Child Care and Common Communicable Diseases in Children Aged 37 to 54 Months," *Arch Pediatr Adolesc Med* 157 (2) (2003): 196–200; Taryn W. Morrissey, "Multiple Child Care Arrangements and Common Communicable Illnesses in Children Aged 3 to 54 Months," *Maternal and Child Health Journal* 17 (7) (2013), available at https://doi.org/10.1007/s10995-012-1125-5.

16 Taryn W. Morrissey, "The Effects Of Early Care And Education On Children's Health," *Health Affairs* (2019), available at https://www.healthaffairs.org/do/10.1377/hpb20190325.519221/full/; Gabriella Conti, James J. Heckman, and Rodrigo Pinto, "The Effects of Two Influential Early Childhood Interventions on Health and Healthy Behavior," *Econ J* 91 (2) (2016): 165–71, available at https://doi.org/10.1016/j.chemosphere.2012.12.037.Reactivity; Frances Campbell and others, "Early Childhood Investments Substantially Boost Adult Health," *Science* 343 (6178) (2014): 1478–85, available at http://science.sciencemag.org/content/343/6178/1478; Pedro Carneiro and Rita Ginja, "Long-Term Impacts of Compensatory Preschool on Health and Behavior: Evidence from Head Start," *American Economic Journal of Economic Policy* 6 (4) (2014): 135–73, available at https://doi.org/10.1257/pol.6.4.135; Jens Ludwig and Douglas L. Miller, "Does Head Start Improve Children's Life Chances? Evidence From a Regression Discontinuity Design," *The Quarterly Journal of Economics* 122 (1) (2007): 159–208; Garces, Thomas, and Currie, "Longer-Term Effects of Head Start"; Kai Hong, Kacie Dragan, and Sherry A. Glied, "Seeing and Hearing: The Impacts of New York City's Universal Pre-Kindergarten Program on the Health of Low-Income Children," *Journal of Health Economics* (2019), available at https://doi.org/10.1016/j.jhealeco.2019.01.004; Terri J. Sabol and Lindsay Till Hoyt, "The Long Arm of Childhood: Preschool Associations with Adolescent Health," *Developmental Psychology* 53 (4) (2017): 752–63, available at https://doi.org/10.1037/dev0000287.

17 Taryn W. Morrissey, "Child Care and Parent Labor Force Participation: A Review of the Research Literature," *Review of Economics of the Household* 15 (1) (2017): 1–24, available at https://doi.org/10.1007/s11150-016-9331-3.

18 Rasheed Malik, "The Effects of Universal Preschool in Washington, DC: Children's Learning and Mothers' Earnings" (Washington: Center for American Progress, 2018), available at https://cdn.americanprogress.org/content/uploads/2018/09/14125635/Children-Learning-Mothers-Earning-report.pdf; Maria Donovan Fitzpatrick, "Preschoolers Enrolled and Mothers at Work? The Effects of Universal Prekindergarten," *Journal of Labor Economics* 28 (1) (2010): 51–85, available at https://doi.org/10.1086/648666; Elizabeth U. Cascio and Diane Whitmore Schanzenbach, "The Impacts of Expanding Access To High-Quality Preschool," Brookings Papers on Economic Activity (2013): 127–78.

19 Steven Jessen-Howard and others, "Understanding Infant and Toddler Child Care Deserts" (Washington: Center for American Progress, 2018), available at https://www.americanprogress.org/issues/early-childhood/reports/2018/10/31/460128/understanding-infant-toddler-child-care-deserts/; Child Care Aware of America, "The US and the High Cost of Child Care."

20 James J. Heckman, "Return on Investment in Birth-to-Three Early Development Programs," webinar on September 6, 2018, available at https://heckmanequation.org/www/assets/2018/09/F_ROI-Webinar-Deck_birth-to-three_091818.pdf [last accessed July 16, 2019].

21 Taryn W. Morrissey and Mildred E. Warner, "Why Early Care and Education Deserves as Much Attention, or More, than Prekindergarten Alone," *Applied Developmental Science* 11 (2) (2007): 57–70, available at https://doi.org/10.1080/10888690701384897.

22 Jill S. Cannon and others, "Investing Early," *RAND Health Quarterly* 7 (4) (2018): 6; Knudsen and others, "Economic, Neurobiological, and Behavioral Perspectives on Building America's Future Workforce."

23 R. Malik and others, "Child Care Deserts: An Analysis of Child Care Centers by ZIP Code in 8 States" (Washington: Center for American Progress, 2016), available at https://www.americanprogress.org/issues/early-childhood/reports/2016/10/27/225703/child-care-deserts/; Jessen-Howard and others, "Understanding Infant and Toddler Child Care Deserts"; R. Malik and others, "America's Child Care Deserts in 2018" (Washington: Center for American Progress, 2018), available at https://www.americanprogress.org/issues/early-childhood/reports/2018/12/06/461643/americas-child-care-deserts-2018/; NSECE, "Households' Geographic Access to Center - Based Early Care and Education: Estimates and Methodology from the National Survey of Early Care and Education" (2016), available at http://www.acf.hhs.gov/sites/default/files/opre/hh_geoaccessto_cb_ece_toopre_042916_b508.pdf; Deborah A. Phillips and Gina Adams, "Child Care and Our Youngest Children," *The Future of Children* 11 (2001): 34–51; Chaudry and others, *Cradle to Kindergarten: A New Plan to Combat Inequality.*

24 Laughlin, "Who's Minding the Kids ? Child Care Arrangements."

25 Child Care Aware of America, "The US and the High Cost of Child Care."

26 Amy Traub, Robert Hiltonsmith, and Tamara Draut, "The Parent Trap: The Economic Insecurity of Families with Young Children" (New York: Demos, 2016), available at http://www.demos.org/sites/default/files/publications/Parent Trap.pdf.

27 "Head Start," available at https://www.childtrends.org/indicators/head-start (last accessed August 30, 2019).

28 Eligibility determined using federal rules. Nina Chien, "Factsheet: Estimates of Child Care Eligibility & Receipt for Fiscal Year 2015" (Washington: U.S. Department of Health and Human Services, 2019), available at https://aspe.hhs.gov/system/files/pdf/260361/CY2015ChildCareSubsidyEligibility.pdf.

29 NCES IES, "Enrollment of 3-, 4-, and 5-Year-Old Children in Preprimary Programs, by Age of Child, Level of Program, Control of Program, and Attendance Status: Selected Years, 1970 through 2016" (2017), available at https://nces.ed.gov/programs/digest/d17/tables/dt17_202.10.asp.

30 Katherine Magnuson and Jane Waldfogel, "Trends in Income-Related Gaps in Enrollment in Early Childhood Education: 1968 to 2013," *AERA Open* 2 (2) (2016): 1–13, available at https://doi.org/10.1177/2332858416648933; Magnuson and Duncan, "Can Early Childhood Interventions Decrease Inequality of Economic Opportunity?"

31 Chaudry and others, Cradle to Kindergarten: A New Plan to Combat Inequality; Daphna Bassok and others, "Within- and Between-Sector Quality Differences in Early Childhood Education and Care," *Child Development* 87 (5) (2016): 1627–45, available at https://doi.org/10.1111/cdev.12551; Rachel A. Gordon and Robin S. Högnäs, "The Best Laid Plans: Expectations, Preferences, and Stability of Child-Care Arrangements," *Journal of Marriage and Family* 68 (2) (2006): 373–93, available at https://doi.org/10.1111/j.1741-3737.2006.00259.x.

32 Chaudry and others, *Cradle to Kindergarten: A New Plan to Combat Inequality*.

33 Magnuson and Duncan, "Can Early Childhood Interventions Decrease Inequality of Economic Opportunity?"; Chaudry and others, *Cradle to Kindergarten: A New Plan to Combat Inequality*.

34 Kimberly Burgess and others, "Trends in the Use of Early Care and Education, 1995-2011" (Washington: U.S. Department of Health and Human Services, 2014), available at http://aspe.hhs.gov/hsp/14/EarlyCareEducation/rb_ece.pdf.

35 Chaudry and others, *Cradle to Kindergarten: A New Plan to Combat Inequality*.

36 Simon Workman, "Where Does Your Child Care Dollar Go? Understanding the True Cost of Quality Early Childhood Education" (Washington: Center for American Progress, 2018).

37 "Childcare Workers," available at https://www.bls.gov/ooh/personal-care-and-service/childcare-workers.htm (last accessed August 30, 2019).

38 "Bus Drivers," https://www.bls.gov/ooh/transportation-and-material-moving/bus-drivers.htm (last accessed August 30, 2019).

39 Rebecca Ullrich, Katie Hamm, and Rachel Herzfeldt-Kamprath, "Underpaid and Unequal: Racial Wage Disparities in the Early Childhood Workforce" (Washington: Center for American Progress, 2016), available at https://cdn.americanprogress.org/wp-content/uploads/2016/08/01073800/NSECE-report2.pdf.

40 The Earned Income Tax Credit, or EITC; Medicaid or the Children's Health Insurance Program, or CHIP; the Supplemental Nutrition Assistance Program, or SNAP; or Temporary Assistance for Needy Families, or TANF.

41 Marcy Whitebook and others, "Early Childhood Workforce Index 2018" (Berkeley, CA: University of California, Berkeley, 2018), available at https://cscce.berkeley.edu/early-childhood-workforce-2018-index/.

42 Matthew Manning and others, "Is Teacher Qualification Associated With the Quality of the Early Childhood Education and Care Environment? A Meta-Analytic Review," *Review of Educational Research* 89 (3) (2019), available at https://doi.org/10.3102/0034654319837540. See also Tran Henry and Weinraub Marsha, "Child Care Effects in Context: Quality, Stability, and Multiplicity in Nonmaternal Child Care Arrangements During the First 15 Months of Life," *Developmental Psychology* 42 (3) (2006): 566, available at http://proquest.umi.com.proxyau.wrlc.org/pqdweb?did=1154133501&Fmt=7&clientId=31806&RQT=309&VName=PQD; S. Loeb and others, "Child Care in Poor Communities: Early Learning Effects of Type, Quality, and Stability," *Child Development* 75 (2004): 47–65; Martha Zaslow and others, "Quality Thresholds, Features, and Dosage in Early Care and Education: Introduction and Literature Review," *Monographs of the Society for Research in Child Development* 81 (2016): 7–27, available at https://doi.org/10.1111/mono.12236; Taryn W. Morrissey, "Multiple Child-Care Arrangements and Young Children's Behavioral Outcomes," *Child Development* 80 (1) (2009), available at

https://doi.org/10.1111/j.1467-8624.2008.01246.x; Alejandra Ros Pilarz and Heather D. Hill, "Unstable and Multiple Child Care Arrangements and Young Children's Behavior," *Early Childhood Research Quarterly* 29 (4) (2014): 471–83, available at https://doi.org/10.1016/j.ecresq.2014.05.007; Mary E. Bratsch-Hines and others, "Child Care Instability from 6 to 36 Months and the Social Adjustment of Children in Prekindergarten," *Early Childhood Research Quarterly* (2015), available at https://doi.org/10.1016/j.ecresq.2014.09.002; Taryn W. Morrissey, "Sequence of Child Care Type and Child Development: What Role Does Peer Exposure Play?" *Early Childhood Research Quarterly* 25 (1) (2010), available at https://doi.org/10.1016/j.ecresq.2009.08.005; NICHD Early Child Care Research Network, "Direct and Indirect Influences of Child Care Quality on Young Children's Development," *Psychological Science* 13 (2002): 199–206; Zaslow and others, "Quality Thresholds, Features, and Dosage in Early Care and Education: Introduction and Literature Review."

43 Marcy Whitebook, Deborah Phillips, and Carollee Howes. "Worthy Work, STILL Unlivable Wages: The Early Childhood Workforce 25 Years after the National Child Care Staffing Study" (Berkeley, CA: University of California, Berkeley, 2014), available at https://cscce.berkeley.edu/files/2014/ReportFINAL.pdf.

44 Anna J. Markowitz and Daphna Bassok, "Teacher Turnover and Child Development in Head Start" (2018).

45 Michael Madowitz, Alex Rowell, and Katie Hamm, "Calculating the Hidden Cost of Interrupting a Career for Child Care" (Washington: Center for American Progress, 2016), available at https://cdn.americanprogress.org/wp-content/uploads/2016/06/17091517/ChildCareCalculator-methodology.pdf.

46 Clive R. Belfield, "The Economic Impacts of Insufficient Child Care on Working Families" (Washington: ReadyNation, 2018), available at https://strongnation.s3.amazonaws.com/documents/522/3c5cdb46-eda2-4723-9e8e-f20511cc9f0f.pdf?1542205790&inline; filename=%22The Economic Impacts of Insufficient Child Care on Working Families.pdf%22.

47 ReadyNation, "Want to Grow the Economy? Fix the Child Care Crisis" (2019), available at https://strongnation.s3.amazonaws.com/documents/602/83bb2275-ce07-4d74-bcee-ff6178daf6bd.pdf?1547054862&inline; filename=%22Want to Grow the Economy? Fix the Child Care Crisis.pdf%22.

48 William T. Gormley, "Universal vs. Targeted Prekindergarten: Reflections for Policymakers." In *The Current State of Scientific Knowledge on Pre-Kindergarten Effects* (Washington: The Brookings Institution, 2017), pp. 51–56.

49 Christina Weiland and Hirokazu Yoshikawa, "Does Higher Peer Socio-Economic Status Predict Children's Language and Executive Function Skills Gains in Prekindergarten?" *Journal of Applied Developmental Psychology* 35 (5) (2014), available at https://doi.org/10.1016/j.appdev.2014.07.001.

50 Elizabeth U. Cascio, "Does Universal Preschool Hit the Target? Program Access and Preschool Impacts." Working Paper 23215 (National Bureau of Economic Research, 2017), available at https://doi.org/10.3386/w23215; Gormley, "Universal vs. Targeted Prekindergarten: Reflections for Policymakers."

51 Greg Duncan and Aaron Sojourner, "Can Intensive Early Childhood Intervention Programs Eliminate Income-Based Cognitive and Achievement Gaps?" *Journal of Human Resources* 48 (4) (2013): 945–968.

52 Dani Carrillo and others, "Instability of Work and Care: How Work Schedules Shape Child-Care Arrangements for Parents Working in the Service Sector," *Social Service Review* 91 (3) (2017): 422–55, available at https://doi.org/10.1086/693750.

53 "Child Care for Working Families Act of 2019: Fact Sheet," available at https://www.help.senate.gov/imo/media/doc/CCFWFA Fact Sheet 116th Congress FINAL.pdf (last accessed August 30, 2019).

54 "S. 1878: Universal Child Care and Early Learning Act,"available at https://www.govtrack.us/congress/bills/116/s1878/text (last accessed July 16, 2019).

55 Ajay Chaudry and Katie Hamm, "The Child Care for Working Families Act Will Boost Employment and Create Jobs" (Washington: Center for American Progress, 2017), available at https://cdn.americanprogress.org/content/uploads/2017/12/06070052/ChildCareWorkforce-brief.pdf.

56 Maya Rossin-Slater, "Maternity and Family Leave Policy." In Susan L. Averett, Laura M. Argys, and Saul D. Hoffman, eds., *The Oxford Handbook of Women and the Economy* (Oxford, UK: Oxford University Press, 2017), available at https://doi.org/10.1093/oxfordhb/9780190628963.013.23; Christopher J. Ruhm, "Policies to Assist Parents with Young Children.," *The Future Of Children* 21 (2) (2011): 37–68, available at https://doi.org/10.1353/foc.2011.0015; Charles L. Baum and Christopher J. Ruhm, "The Effects of Paid Family Leave in California on Labor Market Outcomes," *Journal of Policy Analysis and Management* 35 (2) (2016), available at https://doi.org/10.1002/

pam.21894; Lindsey Rose Bullinger, "The Effect of Paid Family Leave on Infant and Parental Health in the United States," *Journal of Health Economics* 66 (2019): 101–16, available at https://doi.org/10.1016/j.jhealeco.2019.05.006; Alexandra B. Stanczyk, "Does Paid Family Leave Improve Household Economic Security Following a Birth ? Evidence from California," *Social Service Review* (2019); Shirlee Lichtman-Sadot and Neryvia Pillay Bell, "Child Health in Elementary School Following California's Paid Family Leave Program," *Journal of Policy Analysis and Management* 36 (4) (2017): 790–827, available at https://doi.org/10.1002/pam.22012.

57 Allison H. Friedman-Krauss and others, "The National Institute for Early Education Research: The State of Preschool 2018" (New Brunswick, NJ: NIEER, 2018), available at http://nieer.org/wp-content/uploads/2019/04/YB2018_Full-ReportR2.pdf.

58 Yoshikawa and others, "Investing in Our Future: The Evidence Base on Preschool Education"; Phillips and others, "Puzzling It out: The Current State of Scientific Knowledge on Pre-Kindergarten Effects"; Duncan and Magnuson, "Investing in Preschool Programs." See also Pau Balart, Matthijs Oosterveen, and Dinand Webbink, "Test Scores, Noncognitive Skills and Economic Growth," *Economics of Education Review* 63 (2018): 134–53, available at https://doi.org/10.1016/j.econedurev.2017.12.004; Katherine A. Magnuson and Jane Waldfogel, "Early Childhood Care and Education: Effects on Ethnic and Racial Gaps in School Readiness," *The Future of Children / Center for the Future of Children, the David and Lucile Packard Foundation* 15 (1) (2005): 169–96; Magnuson and Duncan, "Can Early Childhood Interventions Decrease Inequality of Economic Opportunity?"