Subsidy Utilization and Impact on Early Care and Education of Low-income Children with Special Needs

Project Team: Amanda L. Sullivan, PhD (PI), Amy Susman-Stillman, PhD (Co-PI), Elyse Farnsworth (Research Assistant), A. Jordan Thayer (Research Assistant)

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Research Questions.

- Do patterns and predictors of subsidy use among children with disabilities or delays differ from those of typically developing children within the population of subsidy-eligible low-income families?
- Are there differences in care types and quality and predictors thereof between children with special needs and typically-developing children from low-income families who do and do not receive subsidies?
- How are subsidy receipt, care type, and care quality related to school readiness of children with special needs who come from subsidy-eligible families?

Key Findings.

- Subsidy-eligible children with special needs were significantly less likely to access subsidized care throughout early childhood than their typically-developing peers. The greatest disparity occurs during preschool when children with special needs accessed care 30% less frequently than their peers without special needs.
- Only parents' marital status predicted subsidy use throughout early childhood. Namely, children with special needs who lived in single-parent households were significantly more likely to use childcare subsidies than their peers from two-parent households.
- The type of childcare (home versus center-based) used by subsidy-eligible children with and without special needs during early childhood differed significantly, but varied with age.
- Use of subsidies was associated with increased enrollment in non-parental care and receipt of more hours per week of childcare.
- Subsidy-eligible children with special needs who received subsidies were significantly more likely to participate in care arrangements that did not meet child-to-caregiver ratio recommendations. Likewise, during preschool subsidy-receipt among this group was associated with poorer global quality, but during toddlerhood was associated with better quality care.
- Several child-, home-, and system-level characteristics predicted the type and quality of care accessed by subsidy-eligible children with special needs, suggesting that not all young children with special needs who are subsidy-eligible access high-quality, nonparental care.
- Childcare type and quality during early childhood were not significant moderators of the relationship between subsidy-receipt and kindergarten outcomes for subsidy-eligible children with special needs.
- Early care experiences were associated with kindergarten outcomes among subsidy-eligible children with special needs. Participation in nonparental care during early childhood, for example, was predictive of *more favorable* kindergarten reading and math performance. Further, inadequate childcare quality during early childhood was predictive of *less favorable* teacher ratings of impulsive and externalizing behaviors during kindergarten. Subsidy receipt had a negative effect on kindergarten academic outcomes.

Background and Purpose.

Young children with special needs represent a substantial proportion of general population under age 5 (~15%), including those served by childcare subsidies. Poverty increases risk for developmental delays and disabilities, in addition to being negatively correlated with school readiness. As such, young children with special needs in low-income families face cumulative risk for poor outcomes, making quality early care and education experiences even more critical. The intent of the childcare subsidy program is to increase low-income parents' ability to enroll their children in quality child care, but little is known about whether low-

income families with children with special needs are using and benefitting from the program.

The principal objective of this project was to describe the nature and impact of childcare subsidy use by low-income families eligible for subsidies who have children with special needs. Further, a goal was to understand how childcare experiences influence kindergarten outcomes among subsidy-eligible children with special needs as well as how the early care experiences of low-income children with and without special needs differ.

Method.
This project featured secondary data analysis of the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B). The ECLS-B included a nationally-representative sample of approximately 10,700 children born in the United States in 2001 and who attended kindergarten in 2006 or 2007. When ECLS-B sampling weights are used in analyses, nationally-representative estimates are produced.

Data
ECLS-B data were collected using a complex, stratified sampling design. Data were collected across five waves throughout early childhood. Low frequency groups (twins, low birth weight, Asian, Native American) were over-sampled in order to allow for subgroup analyses. Data were collected at birth, nine-months, two-years, four-years, and kindergarten by trained field investigators. Multiple informants and methods were used to collect data that would inform how early experiences influenced participants' health, education, and developmental outcomes. Informants included the child's primary caregiver, usually the mother, early care providers, fathers when possible, kindergarten teachers, and the participants. Data was collected via structured interviews, observations, surveys, birth certificate records, and direct child assessment.

Measures
In this project, data from birth certificate records, 9-months, two-years, four-years, and kindergarten were used. Measures included data that were collected via record review, parent interview, childcare provider interview, and direct child assessment. Key measures included:

- Subsidy-eligibility: Significant variation exists among state subsidy eligibility criteria. To account for the variation, include a majority of families that meet state criteria, and allow for changes in income/eligibility throughout early childhood, subsidy-eligibility was defined as households that were at 130% of the federal poverty level or below at 9-months, 2-years, and/or 4-years per parent report.
- Subsidy-receipt: Parent interview data were used to determine which participants used childcare subsidies. At 9-months, 2-years, and 4-years, those families that indicated social services paid for some or all of their childcare were considered subsidy-recipients.
- Special needs status: We operationalized special needs in three ways using parent report and direct child assessment data. Children who were identified for early intervention/special education services, diagnosed with a disabling condition (e.g., Down syndrome), or demonstrated cognitive, social-emotional, or motor delays at least 1.5 standard deviations below the mean on standardized measures were considered to have special needs.
- Childcare type: Parent interview data from the nine-month, two-year, four-year waves of data collection were used to define childcare type. Parents indicated the type of care arrangement their child participated in most frequently (i.e., parental care, home-based nonparental care, or center-based nonparental care).
- Childcare quality: Childcare quality was measured using both structural and process features. These included global quality ratings utilizing the rating systems based on direct observations conducted by trained field investigators; child-to-caregiver ratio per teacher report; caregiver interaction scale data from a direct assessment; and number of hours in care per week per parent report.
- School readiness: School readiness was measured at kindergarten entry and included both cognitive and non-cognitive measures. Direct child assessment of early reading, math, and communication skills were used to measure cognitive readiness, while kindergarten teacher ratings of impulsivity, externalizing behavior, and social skills were indicators of non-cognitive readiness.
- Ecological covariates: Several child- and home-level characteristics were controlled for across

the analyses. These included child sex (boy or girl), child race/ethnicity (White, Black, Other), mother's age, mother's education level (high school or below, some college or degree), mother's employment status (working full time, working part time, not currently working), parental marital status (married or currently not married), home language (English or other), receipt of other public assistance (health care subsidies or food subsidies), number of siblings living in the home (none, one or more), urbanicity (urban/suburban or rural), and census region (Northeast, Midwest, South, West).

Analytic Sample

The unweighted base analytic sample include 4,050 subsidy-eligible children at 9-months, 3,000 subsidy-eligible children at 2-years, and 2,400 subsidy-eligible children at 4-years of age. Smaller subsamples of participants were used for some analyses (e.g., quality data were only available during toddlerhood and preschool for participants in certain settings).

Analytic Approach

Three sets of analyses were conducted, corresponding with the research questions. The first and second sets of analyses provide nationally-representative descriptive estimates of subsidy receipt, care type, and care quality for eligible children with and without special needs followed by multivariate logistic regression to identify the relations of child and family characteristics to subsidy receipt. We tested for significant differences in the proportion of children with and without disabilities who participated in different care types and care quality ratings for those children who received childcare subsidies. The final set of analyses produced estimates of the effects of subsidies on the cognitive and non-cognitive school readiness outcomes. Because subsidies cannot be allocated randomly, estimation of causal effects are difficult to obtain. To approximate randomization, we used propensity score matching, based on an extensive set of child, family, and functional covariates to identify a comparable set of counterfactual cases who did not receive subsidies to use as a mock control group. We used logistic regression to estimate propensity weights based on a set of selection variables. We then used weighted least-squares regression to regress each readiness variable on subsidy status. To test for moderation by type and quality of care, we estimated additional models that incorporate type and quality, followed by models including interaction terms for subsidy by type and subsidy by quality to see if the interaction effects were significant in predicting readiness. Type and quality were examined separately. Each model was replicated for children without disabilities to determine whether effects were different for the two groups.

Results.

Patterns of Childcare Subsidy Use

Throughout early childhood, children with special needs from subsidy-eligible families were significantly less likely to utilize childcare subsidies than their subsidy-eligible peers without special needs. Notably, the difference was greatest during preschool.

Percentage of Subsidy-eligible Children Using Childcare Subsidies

Age	Special Needs	Typical
9-months	8.1	8.5
2-years	11.6	11.8
4-years	6.7	9.8

While these differential rates of subsidy-use may appear small, they were statistically significant and are practically significant, with hundreds of subsidy-eligible children with special needs failing to access childcare subsidies.

Predictors of Childcare Subsidy Use

The only consistent predictor of childcare subsidy use throughout early childhood was parental marital status. Compared to children who parents were married, children living in single-parent households were significantly more likely to utilize childcare subsidies at each age.

At nine-months of age, compared to White children, children who are Black and Asian/Pacific Islander were more likely to use childcare subsidies. Children with older mothers were more likely to access subsidies than younger mothers.

At age two, compared to children with no siblings, children who had either one or three or more

siblings at home were significantly less likely to use childcare subsidies. In addition, children whose mothers were not currently working and who had no post-secondary education were significantly less likely to utilize childcare subsidies.

At age four, children whose mothers were not currently working were significantly less likely to use childcare subsidies than those with mothers working full-time.

Care Type among Subsidy Recipients with and without Special Needs

There were significant differences in the type of care used by children with and without special needs who received childcare subsidies. During infancy, children with special needs who received childcare subsidies were significantly less likely to use home-based care and significantly more likely to use center-based care than their peers without special needs who used childcare subsidies.

This pattern reversed during toddlerhood and preschool. At two-years and four-years, children with special needs who received childcare subsidies were significantly more likely to participate in home-based care and significantly less likely to participate in center-based care when compared to their peers without special needs who used childcare subsidies. Together, these results indicated that receipt of subsidies was not predictive of the type of care arrangement used by subsidy recipients; instead, other factors likely account for the significant differences in the types of care used by subsidy-recipient children with and without special needs.

Care Type and Quality among Subsidy-Eligible Young Children with Special Needs

There were significant differences in the type and quality of care used throughout early childhood between young children with special needs who did and did not receive childcare subsidies. For instance, subsidy-recipients with special needs were significantly more likely to participate in non-parental care at each age. Further, when compared to their peers who did not receive childcare subsidies, young children with special needs who used childcare subsidies were more likely to attend at least 33 hours per week.

Childcare quality data were available for toddlers and preschoolers, and during these time periods there were significant differences in the global quality of care and child-to-caregiver ratio for children with special needs who did and did not use childcare subsidies. Young children with special needs who used subsidies were significantly more likely to attend care settings with adequate or better quality care at age two, but less likely than their non-subsidized peers to attend adequate or better quality care at age four. Receiving childcare subsidies was also linked to a greater likelihood of attending a care arrangement that did not meet quality standards for child-to-caregiver ratios for young children with special needs as compared to their non-subsidized peers with special needs.

Predictors of Care Type and Quality among Subsidy-Eligible Young Children with Special Needs

Throughout early childhood, child- and family-level sociodemographic characteristics were predictive of the type and quality of childcare used by subsidy-eligible children with special needs. Findings suggested that not all young children with special needs access high-quality, nonparental care.

Consistent predictors of childcare type for subsidy-eligible children with special needs were mother's work status and the number of siblings in the home during infancy, toddlerhood, and preschool. Compared to children whose mothers were currently working full-time outside the home, children with special needs whose mothers were not working were significantly less likely to participate in nonparental care arrangements. Having a stay-at-home mother was predictive of significantly lower usage of home-based care and center-based care as compared to having a full-

time working mother. Similar findings were observed for children whose mothers worked part-time versus full-time.

The number of siblings living in the home during early childhood was predictive of access to varying care arrangements among subsidy-eligible children with special needs. At 9-months, subsidy-eligible children with special needs who had one or more siblings living at home were significantly more likely to participate in center-based care and significantly less like to participate in home-based care when compared to their peers with no siblings. During ages two and four, however, children with siblings at home were significantly less likely to participate in nonparental care arrangements.

In addition, at age nine-months, living in a single-parent household was predictive of receiving care in a home-based arrangement, while living in the South was predictive of access care in a center-based arrangement. At age two, living in a single-parent household was predictive of attending home- or center-based care as compared to parental care. Furthermore, children with parents who did not participate in post-secondary education and who did not receive healthcare subsidies were significantly less likely to utilize center-based care arrangements.

The only consistent predictor of global care quality was mother's work status, but the influence of work status varied during these time periods. At age two, subsidy-eligible children with special needs whose mothers were not working were significantly more likely to use inadequate quality care as compared to their peers with full-time working mothers. This was not the case during preschool, when having a non-working mother was predictive of a lower likelihood of using inadequate quality care as compared to having a full-time working mother.

Also at age two, children of color who were not Black, females, and children from homes where a language other than English was spoken were also significantly less likely to be placed in inadequate care arrangements when compared to their white, male, or English-speaking peers. In contrast, having siblings at home and being a subsidy non-recipient were predictive of a greater likelihood of attending inadequate quality childcare.

At age four, children whose mothers had not participated in post-secondary education were more likely to participate in inadequate quality care arrangements as were children whose families did not receive food subsidies.

Care Type and Quality as Moderators of Subsidy Receipt

Childcare type and quality were not significant moderators of the relationship between subsidy-receipt and kindergarten outcomes.

Several main effects were significant predictors of kindergarten outcomes in the moderation analyses, however. For instance, subsidy-eligible children with special needs who attended nonparental care 16 or fewer hours per week were given significantly more favorable ratings of impulsivity and externalizing behavior in kindergarten than those who had attended 40 or more hours of childcare per week. Home-based and center-based childcare participation were also associated with better reading performance in kindergarten. Conversely, receipt of a childcare subsidy was associated with poorer kindergarten reading performance among subsidy-eligible children with special needs.

Childcare type consistently predicted kindergarten academic outcomes among subsidy-eligible children with and without special needs. Specifically, subsidy-eligible children with and without special needs who attended nonparental care arrangements were more likely to perform better on kindergarten reading and math measures. Center-based childcare was a significant predictor of better reading performance and math performance among subsidy-eligible children

without special needs, while subsidy-eligible children with special needs who attended either center- or home-based care performed significantly better on kindergarten reading and math than their peers who did not attend nonparental care in preschool. Higher quality care was associated with better math scores and externalizing behavior ratings among children without special needs whereas lower quality care was associated with less favorable ratings of impulsivity and externalizing behavior among children with special needs.

Effect of Subsidy Receipt on School Readiness of Children with Special Needs

Subsidy receipt had a negative effect on kindergarten academic outcomes. Subsidy-eligible children that received subsidies were negatively impacted in both reading and math compared to matched subsidy-eligible children that did not received subsidies. This influence was not observed in social and behavioral skills, nor was the influence moderated by type of care.

Implications for Policy and/or Practice.

These findings demonstrate inequities in use of subsidies and inconsistent access to quality for low-income children with special needs from infancy through preschool. States should consider policy and practice adjustments, particularly through improved data collection, consumer information, provider supports, and system coordination to facilitate access among *all* families, with some targeted efforts towards families of children with special needs. For example, states may want to track patterns of subsidy use by families who have children with special needs, or develop consumer information specifically for families who are searching for care for children with special needs.

Because children's special needs may affect how, when, and where parents access childcare information and services, states should consider improving knowledge and coordination among frontline subsidy workers, social and health service providers, and educators who engage with families with young children who have delays and disabilities (e.g., early interventionists, therapists, pediatricians, early childhood educators and other providers of IDEA Part B and C services) to increase subsidy awareness and use among this group.

State agencies should ease barriers for providers who serve or are interested in serving children with special needs. Quality rating and improvement systems and professional development systems can provide additional resources and training for providers to increase the supply and quality of subsidized care for children with special needs, as well as incentives to do so. For example, many states offer special rates for providers who care for children with special needs, but providers may need additional supports to qualify and apply for increased reimbursement rates. Furthermore, the rates, which vary by state, need to be sufficient to cover the increased cost of caregiving for children with special needs since any costs not covered by the childcare subsidy may be passed on to families, thereby undermining the intention of the programming by disincentivizing families' utilization of services. In the future, as states develop their CCDF plans, they can also include families with children with special needs as a population on which they intentionally focus.

For more information:

http://ceed.umn.edu/subsidy-utilization-and-impact-on-early-care-and-education-of-low-income-children-with-special-needs/

Contact

Amanda L. Sullivan, PhD, LP
Associate Professor
College of Education and Human Development
University of Minnesota
Phone: 612-626-7221, Email: asulliva@umn.edu