The Effect of Type and Extent of Child Care on Low-Income Children’s Outcomes in Kindergarten, First, and Third Grades

Tamara Halle, Elizabeth Hair, Elizabeth Terry-Humen, Martha Zaslow, Lindsay Pitzer, Bridget Lavelle, and Elizabeth Scott

Society for Research in Child Development
April 9, 2005

Contact: Tamara Halle
thalle@childtrends.org
Acknowledgements

- Work supported by an NICHD grant to Elizabeth Hair and Tamara Halle titled “Parent Education to Child Health: Longitudinal Pathways” (R01 HD46123-01)
Type and Extent of Child Care

- **Extent:**
  - Total hours in **ANY** care (controlling for type and quality) is associated with poorer social adjustment at kindergarten entry (NICHD-ECCRN, 2003).

- **Type & Extent:**
  - Cumulative time in **CENTER-BASED** child care (controlling for quality and average hours/week in care) is associated with more advanced language and cognitive longitudinal outcomes for children (NICHD-ECCRN, 2000).
Low-Income Families

- Total hours in **ANY** care may predict better cognitive outcomes for low-income children.

- But, total hours in **CENTER-BASED** care may not predict poor social-emotional outcomes for low-income children.

  (Love et al., 2003)
Aims

1. To examine whether type and extent of child care the year prior to kindergarten affects outcomes in kindergarten, first and third grades for low-income children.

2. To compare the patterns of results for low-income children to the patterns obtained for the full range of children entering kindergarten.
Hypotheses

- Total hours in **ANY** child care will be associated with worse social-emotional skills.

- Total hours in **CENTER-BASED** care will be associated with better cognitive skills.

- Effects of child care for the low-income sample will be similar to effects found for the full sample for cognitive outcomes, but not for social-emotional outcomes.
Data Source

Early Childhood Longitudinal Study – Kindergarten Class of 1998-99

- Follows children longitudinally from kindergarten entry in fall of 1998 through twelfth grade
- Nationally representative sample of over 22,000 kindergartners from over 1,000 kindergartens
- Information from parents, teachers, school administrators, and direct assessments of children
Samples for this Study

• **Full Sample**: All first-time kindergartners in fall of 1998 with data in third grade (N=11,303)

• **Low-Income Sample**: All first-time kindergartners with data in third grade who were low-income (<200% poverty) (N=4,407)
Type of Child Care the Year Before Kindergarten

- **Center-Based**
  - Head Start
  - Preschool
  - Day care center
  - Nursery School
  - Before- or after-school program at a school or in a center

- **Home-Based**
  - Home child care provider
  - Relative
  - Neighbor
  - Babysitter
  - Non-relative in private home

- **Neither Center- nor Home-Based**
<table>
<thead>
<tr>
<th>Type of Care</th>
<th>Low-Income Sample</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-Based</td>
<td>61.7%</td>
<td>69.3%</td>
</tr>
<tr>
<td>Home-Based</td>
<td>14.2%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Neither Center- nor Home-Based</td>
<td>24.1%</td>
<td>18.0%</td>
</tr>
</tbody>
</table>
Extent of Care

● Hours in **ANY** care:
  - Average total hours per week in any type of child care arrangement the year prior to kindergarten entry

● Hours in **CENTER-BASED** care:
  - Average total hours per week in center-based care the year prior to kindergarten entry
Mean Hours in ANY Care (and Standard Deviations) by Type of Care and Sample

<table>
<thead>
<tr>
<th>Type of Care</th>
<th>Low-Income Sample</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-Based</td>
<td>34.3 (23.1)</td>
<td>31.6 (21.7)</td>
</tr>
<tr>
<td>Home-Based</td>
<td>32.8 (17.9)</td>
<td>32.1 (17.1)</td>
</tr>
<tr>
<td>Neither Center- nor Home-Based</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>
Child and Family Control Variables

- Child age
- Child Sex
- Low Birthweight
- Disability
- Race/Ethnicity
- Parent Education
- Primary Language in the Home
- Family Structure
- Teen Mother
- Income-to-Poverty Ratio
School and Classroom Control Variables

- Parental Involvement in School
- School Type (public/private)
- Extent of Kindergarten (full-day/half-day)
- Percent low-income students
- Percent minority students
- Teacher Educational Attainment
- Teacher Certification
- Number of Classroom Activity Areas
- Instructional Approaches (whole group, small group, etc.)
- Years of teaching experience (K, 1, and 3)
Outcome Measures

- Reading
- Math
- Teacher-Rated Self-Control
- Teacher-Rated Approaches to Learning

Measured at Fall K, and Spring K, 1st, and 3rd
Findings for Reading

- Hours in **ANY** care:
  - Full Sample: No effects
  - Low-Income: More hours $\rightarrow$ higher reading scores in 1st and 3rd grades

- Hours in **CENTER-BASED** care:
  - Full Sample: More hours $\rightarrow$ higher reading scores in K and 1st grade
  - Low-Income: No effects
Findings for Math

- Hours in **ANY** care:
  - Full Sample: No effects
  - Low-Income: No effects

- Hours in **CENTER-BASED** care:
  - Full Sample: More hours $\rightarrow$ higher math scores in K, 1st, and 3rd grades
  - Low-Income: More hours $\rightarrow$ higher math scores in Fall and Spring K
Findings for Self-Control

- Hours in **ANY** care:
  - Full Sample: More hours $\rightarrow$ less optimal self-control in K, 1\textsuperscript{st}, and 3\textsuperscript{rd} grades
  - Low-Income: No effects

- Hours in **CENTER-BASED** care:
  - Full Sample: More hours $\rightarrow$ less optimal self-control in K, 1\textsuperscript{st}, and 3\textsuperscript{rd} grades
  - Low-Income: More hours $\rightarrow$ less optimal self-control in K and 1\textsuperscript{st} grade
Findings for Approaches to Learning

- Hours in **ANY** care:
  - Full Sample: More hours → lower approaches to learning in Fall K only
  - Low-Income: No effects

- Hours in **CENTER-BASED** care:
  - Full Sample: More hours → lower approaches to learning in K, 1\textsuperscript{st}, and 3\textsuperscript{rd} grades
  - Low-Income: More hours → lower approaches to learning in 1\textsuperscript{st} grade only
### Effect Sizes for Type of Care

<table>
<thead>
<tr>
<th></th>
<th>Fall K</th>
<th></th>
<th>Spring K</th>
<th></th>
<th>Spring 1st</th>
<th></th>
<th>Spring 3rd</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full</td>
<td>Low</td>
<td></td>
<td>Full</td>
<td>Low</td>
<td>Full</td>
<td>Low</td>
</tr>
<tr>
<td>Reading</td>
<td>0.34</td>
<td>0.15</td>
<td></td>
<td></td>
<td>0.25</td>
<td>0.07</td>
<td>0.21</td>
<td>0.01</td>
</tr>
<tr>
<td>Math</td>
<td>0.37</td>
<td>0.18</td>
<td></td>
<td></td>
<td>0.31</td>
<td>0.13</td>
<td>0.23</td>
<td>0.07</td>
</tr>
<tr>
<td>Self-Control</td>
<td>-0.08</td>
<td>-0.14</td>
<td></td>
<td></td>
<td>-0.10</td>
<td>-0.17</td>
<td>-0.09</td>
<td>-0.15</td>
</tr>
<tr>
<td>Approaches to</td>
<td>0.08</td>
<td>0.00</td>
<td></td>
<td></td>
<td>0.03</td>
<td>-0.05</td>
<td>0.01</td>
<td>-0.09</td>
</tr>
<tr>
<td>Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary of Findings

- **Full Sample:**
  - More hours in CENTER-BASED care ➔
    - better reading and math scores
    - less optimal self-control & approaches to learning
  - More hours in ANY care ➔
    - less optimal self-control & approaches to learning

- **Low-Income Sample:**
  - More hours in CENTER-BASED care ➔
    - better reading and math scores
    - less optimal self-control & approaches to learning
    - fading out of effects over time
  - More hours in ANY care ➔
    - better reading scores
Further Analyses

- Further explore reasons for varying findings for low-income children
  - Inconsistencies between early and later learning environments
  - Interaction Effects
    - Income x Type/Extent of Child Care
    - Parent Education x Type/Extent of Child Care
  - Structural relationships
  - Growth over time