Kindergarten Children’s Development in Rural and Non-Rural Settings

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Research supported by IES Grants #R324A100115 and #R305F050284, awarded to Dr. Susan Sheridan
Behavioral Challenges

• Childhood behavior problems often occur across multiple settings (e.g., home, educational setting; Achenbach, McConaughy, & Howell, 1987).

• Left unaddressed, young children with problem behaviors are vulnerable to negative outcomes later in life.

• Early intervention is necessary to reduce externalizing behaviors and build adaptive skills (Denham, 2006; Grusec & Davidov, 2010).
Transition to Kindergarten

• Children often experience academic, social, and cultural discontinuities when transitioning into kindergarten (Christenson, 1999).

• More than any other school readiness skill, young children's behavioral problems are rated as most concerning to Kindergarten teachers (Rimm-Kaufman & Pianta, 2000).

• The environmental context and the relationships between them are important when examining children’s transitions to Kindergarten.
Environmental Context

• Ecological theory (Bronfenbrenner, 1979) emphasizes the importance of person-environment fit

• Optimal development occurs when:
  – Environments are conducive to social, behavioral, and academic success
  – Coordination exists between the key environments (home-school partnerships)

• Early academic and behavior problems are influenced by:
  – Community setting
  – Socio-demographic factors
Community Factors

• Rural and non-rural communities differ in ways that may impact children’s development (Evans, 2006):
  – Resource accessibility
  – Economic characteristics
  – Collective human, social, and cultural capital
Socio-Demographic Factors

• Certain socio-demographic factors place children at risk for academic and behavioral challenges.

• Exposure to multiple risk factors impacts children more than individual risk factors (Evans, Whipple, & Li, 2013).

• Socio-demographic risk factors include:
  – Fewer than two adults in the home
  – Maternal education less than high school degree
  – Free and reduced lunch eligibility
  – Language differences between home and school
Cumulative Risk

• Cumulative risk is defined as the total number of risk factors experienced by a child.

• Early exposure to risk factors predicts children’s behavior problems (Appleyard, Egeland, van Dulmen, & Sroufe, 2005).
  – Children who experience more risk factors have poorer behavior (Sheridan et al., 2012).
Current Study Purpose

• The purpose of this study is to examine:

  – The effect of community setting on parent and teacher reports of student behavior

  – The differential effect of cumulative risk on children’s behaviors across rural and non-rural communities
Participants

• Participants were drawn from two randomized controlled trials

• 111 kindergarten students *identified as having disruptive behaviors* and their parents

• 53 teachers

• 40 schools
  • 10 mid-size city schools
  • 30 rural schools
## Student Demographics

<table>
<thead>
<tr>
<th></th>
<th>Rural (n=61)</th>
<th>Non-Rural (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (SD) Age</strong></td>
<td>5.55 (.55)</td>
<td>5.23 (.48)</td>
</tr>
<tr>
<td><strong>Gender (Male)</strong></td>
<td>84%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Disability Status</strong></td>
<td>28%</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>85%</td>
<td>77%</td>
</tr>
<tr>
<td>African American</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Risk Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>18%</td>
<td>50%</td>
</tr>
<tr>
<td>1</td>
<td>3%</td>
<td>36%</td>
</tr>
<tr>
<td>2</td>
<td>36%</td>
<td>12%</td>
</tr>
<tr>
<td>3 or more</td>
<td>43%</td>
<td>2%</td>
</tr>
</tbody>
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## Parent Demographics

<table>
<thead>
<tr>
<th></th>
<th>Rural (n=61)</th>
<th>Non-Rural (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (SD) Age</strong></td>
<td>32.4 (5.3)</td>
<td>32.6 (6.5)</td>
</tr>
<tr>
<td><strong>Free/Reduced Lunch (Eligible)</strong></td>
<td>68%</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Female</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than HS diploma</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>HS diploma or GED</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Some college</td>
<td>44%</td>
<td>25%</td>
</tr>
<tr>
<td>College degree</td>
<td>32%</td>
<td>38%</td>
</tr>
<tr>
<td>Graduate coursework/Degree</td>
<td>4%</td>
<td>17%</td>
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</table>
# Teacher Demographics

<table>
<thead>
<tr>
<th>Category</th>
<th>Rural (n=30)</th>
<th>Non-Rural (n=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (female)</td>
<td>96%</td>
<td>100%</td>
</tr>
<tr>
<td>Ethnicity (white)</td>
<td>100%</td>
<td>96%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College degree</td>
<td>21%</td>
<td>43%</td>
</tr>
<tr>
<td>Some graduate coursework</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>29%</td>
<td>9%</td>
</tr>
<tr>
<td>Mean (SD) Years of Experience</td>
<td>14.1 (13.8)</td>
<td>7.6 (8.9)</td>
</tr>
<tr>
<td>Certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General education</td>
<td>89%</td>
<td>78%</td>
</tr>
<tr>
<td>General &amp; Special education</td>
<td>11%</td>
<td>22%</td>
</tr>
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</table>
Measures

• Student Behavior
  • Parent and teacher report on broadband scales of *Behavior Assessment System for Children* (BASC)

• Cumulative Risk
  • Parent report of socio-demographic risk factors

• Community Setting
  • Rural communities across three Midwestern states (Nebraska, Iowa, Kansas)
  • Moderately sized city in Nebraska (Non-rural)
Analyses

- A multilevel model of students and their parents nested within teachers was conducted to examine:
  - The effect of community setting on parent and teacher reports of student behavior (main effects)
  - The differential effect of cumulative risk by community setting on parent and teacher reports of student behavior (interaction effects)
Results: Main Effects

• Marginal differences between rural and non-rural kindergarten students noted on:

  • Teacher reports of the *behavioral symptoms index*, with rural students reported as having more challenging behaviors than non-rural students (*p* = .07)

  • Parent reports of *internalizing problems*, with children in rural communities reported as having fewer internalizing difficulties than non-rural students (*p* = .07)
Results: Interaction Effects

Geographic setting (rural vs non-rural) matters -- significantly -- when determining whether the degree of risk will be a factor in influencing children’s behavioral functioning.
Results: Interaction Effects

- Effect of cumulative risk on teacher reports of students’ **behavioral symptoms** varies as a function of their community setting ($p = .02$)

As rural students’ cumulative risk increase, teachers’ report they display more challenging behavior.

As non-rural students’ cumulative risk increases, teachers’ report fewer challenging behaviors.
Results: Interaction Effects

- Effect of cumulative risk on teacher reports of students’ **adaptive skills** varies as a function of their community setting ($p = .05$)
Results: Interaction Effects

- Effect of cumulative risk on parent reports of children’s **internalizing problems** varies as a function of their community setting ($p = .02$)

As non-rural students’ cumulative risk increases, their parents’ report they have fewer internalizing difficulties
Discussion

• General findings:
  – The presence and type of problem behaviors exhibited by kindergarten students differs based on community setting.
    • Consistent with nationally-representative study of rural vs. non-rural children using ECLS-B data (Sheridan et al., 2014)
  – Increasing levels of risk functions differently in rural and non-rural settings.
    • Access to services in urban/suburban settings may offset challenges associated with risk
Implications for Policy & Practice

• Preschool interventions focusing on decreasing problem behaviors and increasing adaptive behaviors are needed.

• To be maximally effective, interventions that address behavioral concerns for children at risk may need to be context-sensitive, or tailored to the community context within which children live.
Implications for Policy & Practice

• Access to methods to augment the skills and competencies of rural parents and teachers are necessary, especially for children exposed to multiple risk factors.

• Strategies that develop context-sensitive, cross-system partnerships are effective at building community support for young children’s development.
  
  — Kunz et al. (Loft Room) explores preliminary effects of CBC as a partnership intervention for addressing challenging behaviors in rural communities.
Limitations

• The overall sample size of rural and non-rural settings is small.

• The rural sample used in this study is not representative of all rural areas.

• We cannot determine causation.
Contact Information

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Facilitated Discussion

• How can information from this study inform or advance early childhood practice?

• How can information from this study inform or advance early childhood public policy?

• What additional research is needed to inform or advance early childhood practice and/or policy?
Thank you!

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