Childhood Food Insecurity: The Mitigating Role of SNAP

Tracy Vericker and Gregory Mills

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Policy context

- Households with child food insecurity: households with at least one child lacking access to adequate food for active healthy living.
- Adverse effects of food insecurity on children: anxiety, chronic illness, behavioral problems, academic and social impairment, especially during elementary school years.
- In 2012, 11.3 percent of U.S. children (8.3 million) were in households where at least one child was food insecure.
  - This included 1.0 million children in households with very low food security among children.
Conceptual framework

- Risk factors at multiple levels
  - Community: retailer types and locations (food deserts), transportation, food prices, unemployment rate
  - Household: human capital, social capital, financial resources, parental health
  - Child: health needs, age group, peer influences
Conceptual framework (cont.)

• Coping strategies of differing types
  – Informational/emotional: social support systems
  – Material: access to food and nutrition programs, food pantries, other food sources
  – Instrumental/practical: informal financial or in-kind support (e.g., child care or food sharing)
Research questions

• What factors are associated with a lower probability of food-secure children becoming food insecure (entry rate)?

• What factors are associated with a higher probability of food-insecure children becoming food secure (exit rate)?

• Is household receipt of SNAP associated with a lower prevalence of food insecurity among children, through either a lower entry rate or a higher exit rate or both?
Data sources

• Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K): child-based panel study
  – Analysis focused on low-income households (those with annual income under $40,000 at one or more of the survey waves)
  – Four survey waves administered, when focal child was in kindergarten (1999), 3rd-grade (2002), 5th-grade (2004), and 8th-grade (2007).
  – For each wave, 18-item food security module provided data on food security status of children in household (not specifically the focal child)

• Local socioeconomic variables by zip code, from Census and BLS data
Key constructs

- Dependent variables: whether the household experienced entry into or exit from childhood food insecurity

- Independent variables
  - **Community characteristics**: number of community food service providers and grocery stores in zip code, county unemployment rate, urban/rural area
  - **Household characteristics**: prior childhood food insecurity, number and ages of children in household, and family structure; parent’s employment, education, depressive symptoms, health status, and social support; SNAP participation
Descriptive statistics


• Unweighted distribution of households, by number of survey waves at which child food insecurity was reported:
  – 0 waves: 89.3 percent
  – 1 wave: 6.6 percent
  – 2 waves: 2.7 percent
  – 3 waves: 1.1 percent
  – 4 waves: 0.3 percent

• Entry rate (into child food insecurity): 2.9 percent
• Exit rate (from child food insecurity): 95.8 percent
Multivariate estimation

- Logistic regression models
- Separate equations estimated for entry into and exit from child food insecurity between 2002 and 2004 waves
- Analysis sample limited to households with annual income under $40,000 in at least one of 1999, 2002, or 2004 waves
- Key policy-relevant independent variables: SNAP participation in 2002 and 2004 waves
- Two separate analysis files constructed:
  - 3,340 households who reported child food security in 2002 wave
  - 210 households who reported child food insecurity in 2002 wave
## Findings: entry into child food insecurity

<table>
<thead>
<tr>
<th></th>
<th>Odds ratio</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earlier food insecurity among children (1999)</td>
<td>2.16*</td>
<td>0.32</td>
</tr>
<tr>
<td>Number of children in household under age 7 (2004)</td>
<td>1.42*</td>
<td>0.16</td>
</tr>
<tr>
<td>Parent worked at least 35 hours per week (2004)</td>
<td>0.50*</td>
<td>0.31</td>
</tr>
<tr>
<td>Parent education level is high school or less (2004, vs. more than high school)</td>
<td>1.67*</td>
<td>0.21</td>
</tr>
<tr>
<td>Parent has moderate depressive symptoms (2002, vs. no depressive symptoms)</td>
<td>2.21*</td>
<td>0.33</td>
</tr>
<tr>
<td>Parent has severe depressive symptoms (2002, vs. no depressive symptoms)</td>
<td>2.13*</td>
<td>0.34</td>
</tr>
<tr>
<td>Parent in fair to poor health (2004)</td>
<td>2.29**</td>
<td>0.30</td>
</tr>
<tr>
<td>Parent has low social support (2002, vs. high social support)</td>
<td>2.27*</td>
<td>0.29</td>
</tr>
<tr>
<td>Sample size</td>
<td>3,340</td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant at 0.05 level.

**Statistically significant at 0.01 level.

Note: No significant effect of SNAP participation in 2002 or 2004.
### Findings: exit from child food insecurity

<table>
<thead>
<tr>
<th></th>
<th>Odds ratio</th>
<th>Standard error</th>
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</thead>
<tbody>
<tr>
<td>Prior SNAP participation, 2002</td>
<td>3.93**</td>
<td>0.50</td>
</tr>
<tr>
<td>Current SNAP participation, 2004</td>
<td>0.17**</td>
<td>0.55</td>
</tr>
<tr>
<td>Earlier food insecurity among children, 1999</td>
<td>0.22**</td>
<td>0.47</td>
</tr>
<tr>
<td>Parent education level is high school or less, 2004 (vs. more than high school)</td>
<td>4.79**</td>
<td>0.52</td>
</tr>
<tr>
<td>Low social support, 2002 (vs. high social support)</td>
<td>0.43*</td>
<td>0.43</td>
</tr>
<tr>
<td>Rural area</td>
<td>5.65**</td>
<td>0.46</td>
</tr>
<tr>
<td>Number of grocery stores in zip code</td>
<td>1.09**</td>
<td>0.03</td>
</tr>
<tr>
<td>County unemployment rate</td>
<td>0.81*</td>
<td>0.10</td>
</tr>
<tr>
<td>Sample size</td>
<td></td>
<td>210</td>
</tr>
</tbody>
</table>

*Statistically significant at 0.05 level.
**Statistically significant at 0.01 level.

**Key finding:** SNAP participation in 2002 is associated with significantly higher likelihood that food-insecure children in 2002 are food secure in 2004.
Concluding assessment

• This study provides additional evidence that SNAP participation has an ameliorative effect on food insecurity among children.

• Consistent with earlier research, this study provides evidence that households with food insecure children tend to seek out SNAP.

• Other factors associated significantly with entry into and exit from food insecurity include a range of community and household characteristics.