Household Structure and Risk of Food Insecurity: Implications for Children & Older Adults

Jennifer A. Garner, PhD, RD
Assistant Professor, Division of Medical Dietetics, Ohio State University

January 20th, 2022
Thank you!

- Collaborators (and mentors):
  - Kammi Schmeer, PhD
  - Jill Clark, PhD
  - Chris Taylor, PhD
  - Neal Hooker, PhD

- Student trainees:
  - Patrick Creedon, MPA
  - Joshua Brown, MS
  - Kathleen Krzyzanowski Guerra, MIS, PhD Candidate

- Funding:
  - Institute for Population Research, Ohio State University
  - NIH center grant P2CHDo58484 awarded by the National Institute of Child Health and Human Development (core support)

- NOPREN RFAWG & FSWG membership!
  - Email me at garner.288@osu.edu
1. The household (HH) in which we live is one of the most influential contexts for health.
Why does this work matter?

2. Household composition, or structure, is a modifiable arrangement.
   - Formation of **multi-generational households** is a known coping mechanism during periods of economic distress (Keene & Batson 2010).
   - Formation of **skipped-generation households**, or ‘grand families’, is a necessity for some families (Dolbin-MacNab & O’Connell 2021).

3. Federal legislation has sought to promote ‘kinship’ care, including support for grandparent guardians, and reduce foster care demand.
   - Family First Prevention Services Act (P.L. 115-123)
   - Supporting Grandparents Raising Grandchildren Act (P.L. 115-196)

4. A confluence of factors motivated this legislation and has increased the salience of such household arrangements since it passed.

- The share of children living in multi-gen and skipped-gen households has increased significantly in recent years (Pilkauskas et al. 2020).
- There is growing concern regarding the aging population and burden of food insecurity among older adults (8.3% among elderly living alone).
- Between 2019-2020, the prevalence of food insecurity increased significantly among households with children, to 14.8% (Coleman-Jensen et al. 2021).

5. These household arrangements are seen as having both positive and negative impacts on household members:

- Enhanced motivation, but numerous barriers to health (Clotey et al. 2015, Hatcher et al. 2018)
- Greater (intergenerational) social engagement, but also social isolation (Bullock 2004)
- Heightened purpose balanced by heightened stress
Why does this work matter?
What is the effect of household structure on household food security status among a nationally-representative sample of U.S. HHs with children?
Data Source: NHANES (2011-2016) to capture overlap in food security and household composition data.

Inclusion criteria: Cases/households with at least one child < 18 years old.

Key variables:
- Food security status: Cases assigned to one of three categories – fully food secure, marginally food secure, or food insecure – using 18-Item U.S. Household Food Security Module with 12-month reference period.

Analysis: Multinomial logistic regression model (IBM SPSS Statistics, V.27)
Methods

**Data Source**: NHANES (2011-2016) to capture overlap in food security and household composition data.

<table>
<thead>
<tr>
<th>Household Structure Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structures</strong></td>
</tr>
<tr>
<td>Two-‘Parent’</td>
</tr>
<tr>
<td>Single-‘Parent’</td>
</tr>
<tr>
<td>‘Grandparent’-as-Caregiver</td>
</tr>
<tr>
<td>Multigenerational Household</td>
</tr>
</tbody>
</table>
Results

Multinomial Logistic Regression Model of Household Food Security

<table>
<thead>
<tr>
<th>Household</th>
<th>Marginal v. Full Security</th>
<th>Insecure v. Full Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Intercept</td>
<td>-0.348 (0.340)</td>
<td>-0.335 (0.259)</td>
</tr>
<tr>
<td>Poverty-Income Ratio</td>
<td>-0.589 (0.050)</td>
<td>-0.749 (0.059)</td>
</tr>
<tr>
<td>Number of Adults</td>
<td>0.113 (0.066)</td>
<td>0.168 (0.054)</td>
</tr>
<tr>
<td>Number of Children</td>
<td>-0.140 (0.053)</td>
<td>-0.080 (0.041)</td>
</tr>
<tr>
<td>Structure*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single ‘Parent’</td>
<td>-0.081 (0.049)</td>
<td>-0.101 (0.032)</td>
</tr>
<tr>
<td>Grandparent caregiver</td>
<td>-0.705 (0.260)</td>
<td>-0.569 (0.194)</td>
</tr>
<tr>
<td>Multigenerational</td>
<td>-0.436 (0.207)</td>
<td>-0.368 (0.197)</td>
</tr>
<tr>
<td>Ever used SNAP? Yes*</td>
<td>0.539 (0.142)</td>
<td>1.100 (0.102)</td>
</tr>
<tr>
<td>Gender, Female*</td>
<td>0.162 (0.129)</td>
<td>0.140 (0.092)</td>
</tr>
<tr>
<td>Education Level*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; High School</td>
<td>-0.137 (0.137)</td>
<td>0.170 (0.145)</td>
</tr>
<tr>
<td>&gt; High School</td>
<td>-0.327 (0.161)</td>
<td>-0.178 (0.123)</td>
</tr>
<tr>
<td>Relationship Status*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not partnered</td>
<td>-0.168 (0.138)</td>
<td>0.048 (0.130)</td>
</tr>
<tr>
<td>Race &amp; Ethnicity*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexican American</td>
<td>0.357 (0.180)</td>
<td>0.386 (0.156)</td>
</tr>
<tr>
<td>Other Hispanic</td>
<td>0.334 (0.204)</td>
<td>0.267 (0.175)</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>0.373 (0.155)</td>
<td>0.084 (0.128)</td>
</tr>
<tr>
<td>Asian, non-Hispanic</td>
<td>0.016 (0.243)</td>
<td>-0.495 (0.185)</td>
</tr>
<tr>
<td>Other, Multi-Racial</td>
<td>0.338 (0.181)</td>
<td>0.347 (0.158)</td>
</tr>
</tbody>
</table>

*Reference categories, in order: Two ‘Parent’; Never used SNAP; Male; High School Graduate; ‘In a partnered relationship’; White, non-Hispanic, respectively.
What is the relationship between an older adult’s household role, household food security status, and diet quality in two- and three-generation households?
Methods

Data Source: NHANES (2011-2016) to capture overlap in food security and household composition data.

Inclusion criteria: Cases/households with at least one older adult (60+ yrs)

Key variables:

- **Role of older adult**: Cases assigned to one of three categories: 1) head-of-household and caregiver, 2) head-of-household but not a caregiver, or 3) older adult is not head of household.

- **Food security status**: Cases assigned to one of three categories – fully food secure, marginally food secure, or food insecure – using 18-Item U.S. Household Food Security Module with 12-mo reference period.

- **Diet Quality**: Assessed via Healthy Eating Index (HEI 2015) scores based on a single 24-hour diet recall.

Analysis: Chi-square and ANOVA (IBM SPSS Statistics, V.27)
Results

Household Food Security Status by Role of Older Adult in the Household ($p<0.001$)
Results

Individual HEI Score by Role of Older Adult in the Household

- HOH and Caregiver: 50.21
- HOH but not Caregiver: 53.68 (p=0.001)
- Not HOH: 51.53

Ref
RQ1

- Our results appear to counter other analyses that have found single-parent households and more complex households to be at greater risk for food insecurity than two-parent households (e.g., Gunderson and Ziliak, 2014; Balisteri 2018).

- This may be due to dataset limitations, household structure categories (and related assumptions), and the mutually-influential manner in which household structure and food security likely interact over time.

RQ2

- For older adults, the added demand of caregiving may have a tangible impact on both the broader household’s food security and their individual diet quality.
• **Implications for children & older adults**
  - Is the relatively poorer diet quality of older adults in a caregiving role a reflection of their shielding behaviors?
  - How can public health and food policy interventions be designed to promote mutual health for both children and older adults in extended household arrangements?

• **Implications for research**
  - Need more robust household composition data (e.g., rosters)
  - To what degree are (caregiving) roles and receipt of care (by children) executed & experienced across multiple households?
  - What are the temporal dynamics of these relationships? Opportunity for longitudinal and mixed method research.
  - Are skip- and multi-gen household arrangements experienced differently across the rural-urban continuum (e.g., in relation to culture, housing equity, etc.)?
References