Packaged Food and Beverage Purchases in the Supplemental Nutrition Assistance Program

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Today

- Results from recent study on SNAP households’ food and beverage purchase behaviors
- Introduction to upcoming study on where SNAP households shop for foods and beverages (no results)
Study 1: Household Food and Beverage Purchases
Background
Supplemental Nutrition Assistance Program (SNAP)

- Largest nutrition assistance program in the U.S.
  - ~45 million individuals in 2016 (1 in 7 Americans)
  - About 7% of SNAP households live in rural areas
Why study SNAP participants’ purchase behaviors?

• SNAP serves large number of low-income households, who are at highest risk of diet-related diseases
• Identify specific areas to target with future interventions (e.g. SNAP-Ed)
• Understand whether policy proposals to change SNAP package can meaningfully impact overall nutritional quality
Objective

• Use a large, national electronic purchase dataset to describe SNAP households’ packaged food and beverage purchases
  – Health- and policy-relevant outcomes
  – Compare to non-SNAP households for context
Methods
Data and sample

**Data:** Nielsen Homescan Panelists from 3 quarters in 2012-2013

- About 60,000 household/year
- Scan barcodes of all packaged purchases
- We link barcodes to detailed nutrition information
Data source

- Nearly all research on SNAP participants’ diet-related behaviors has used interview-based measures
  - Electronic purchase data like Homescan can help triangulate previous work
    - Avoid recall-bias
    - Long-term
    - Detailed nutrition information

(Andreyeva, Tripp & Schwartz, 2015)
Predictor variable: SNAP Status

- SNAP status assessed every 6 months with 1 survey item
- Households categorized as:
  - Current SNAP participants
  - Income-eligible nonparticipants (household income $\leq 130\%$ FPL)
  - Higher-income nonparticipants (income $> 130\%$ FPL)
Outcome variables

- Examined health- and/or policy-relevant outcomes

(Cross et al., 2007; Chan et al., 2011; Malik et al., 2013; Mailk et al., 2010; Hu, 2013; Mistler, 2015)
22 outcomes examined

- 13 food categories
  - Including: Fruits, vegetables, desserts and sweets, salty snacks, candy, junk food
- 4 beverage categories
  - Sugar-sweetened beverages (SSBs), alcohol, milk, juice
- 5 nutrients
  - kcal, sodium, sugar, saturated fat, and fiber
Analysis

• Unadjusted mean purchases
• Adjusted mean purchases, controlling for demographics, household composition, market, total purchases
  – Pooled OLS with clustered standard errors
  – Bonferroni corrected alpha level
• Sensitivity analysis to account for missing data on SNAP question

(Seaman & White, 2013)
Results
Results: Sample characteristics

• N = 98,256 household-by-quarter observations with complete data
• SNAP status:
  • 7% current participants
  • 6% income-eligible nonparticipants
  • 87% higher-income nonparticipants
• Some differences between SNAP and non-SNAP households in demographics
  – SNAP households younger, more children, less likely to have college degree, less likely to be married
Results: Unadjusted purchases

- Key finding: Average household (across groups) show room for improvement

|--------------------------|----------------------|------------------------|-----------------------|-----------------------------|
Results: Unadjusted purchases

- Average household (across groups) show room for improvement

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Results: Unadjusted purchases

- Average household (across groups) show room for improvement

### Unadjusted Mean Purchases (per household member per day) (selected results)

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<td>10</td>
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<td>≥ 25 – 38 g</td>
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Unadjusted purchases of potentially restricted items

• Legislation proposed to restrict SNAP benefits from being used to purchase items such as candy, junk foods, and SSBs
• SNAP households purchased considerable quantities of these items
  – 477 kcal of junk foods
    • (Candy, sweeteners, desserts, salty snacks)
  – 89 kcal of SSBs
➢ Total of 565 kcal/person/day in potentially restricted items
Adjusted purchases: how do SNAP vs. non-SNAP compare?

- SNAP and non-SNAP (income-eligible and higher income) show similarities and differences in purchases
- No significant differences for purchases of:
  - Total vegetables
  - Legumes
  - Nuts
  - Dairy
  - Desserts and sweet snacks
  - Candy
  - Junk foods
  - Alcohol
  - Milk
  - Saturated fat

- Significant differences tend to favor non-SNAP households in healthfulness
**Significant differences in purchases**

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<th>Outcome (per person/day)</th>
<th>Current Participants Adj. Mean</th>
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*All differences reported were significant at the Bonferroni-corrected alpha of 0.0023 with clustered SEs Adjusting for: demographics, household composition, market,*
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Sensitivity analysis: Adjusting for missing SNAP status

- All results robust when using IPWs to adjust for missingness of SNAP status
Limitations

• Data capture packaged food and beverage purchases
  – No information on loose produce, bakery items, bulk grains, deli items
  – No information on restaurant/fast food purchases
  – No information on consumption

• Cross-sectional, descriptive analyses only
  – SNAP participants may be different from nonparticipants
Summary and implications

• Average household (regardless of SNAP status) shows room for improvement

• SNAP households purchase fewer fruits, fiber and more processed meat, SSBs, calories, sodium, sugars
  – SNAP-Ed might add more information on these areas

• High purchases of potentially restricted items (SSBs, junk foods)

• More information in AJCN (2017) article

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Nutritional profile of Supplemental Nutrition Assistance Program household food and beverage purchases\(^1,2\)

*Anna H Grummon\(^3,5\) and Lindsey Smith Taillie\(^4,5,*\)
Upcoming Study
Background

• Low-income households tend to be in worse food environments
• Interventions have focused on:
  – Increasing access to grocery stores
  – Improving food environment in convenience stores
• Limited research on:
  – Where SNAP households shop
  – Whether/how nutritional profile of household purchases varies with retailer type and SNAP status
Upcoming study: Overview

- Nielsen Homescan data from 2011-2014
- **Objective 1**: Investigate where SNAP and non-SNAP households purchase foods and beverages
  - Describe volume/calories, foods, beverages, and nutrients purchased from different store types (grocery stores, mass merchandisers, convenience stores)
  - Potential implication: Are convenience stores a considerable source of calories for SNAP households?
Upcoming study: Overview

- Nielsen Homescan data from 2011-2014
- **Objective 1:** Investigate where SNAP and non-SNAP households purchase foods and beverages
- **Objective 2:** Compare the nutritional profile of SNAP and non-SNAP purchases *within* each retailer type
  - Ex: compare nutritional profile of grocery store purchases between SNAP vs. non-SNAP
  - Potential implication: do SNAP purchases ‘catch up’ to non-SNAP purchases when those purchases are made at grocery stores?
Thank you!

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  • Carolina Population Center (P2C HD050924, T32 HD007168)
  • Royster Society of Fellows

Note: All results presented herein were authors’ own analyses and calculations based in part on data reported by Nielsen through its Homescan Service for the 52-week periods ending on December 31, 2012 and December 31, 2013. Nielsen data were licensed from The Nielsen Company, 2017.