Community differences in availability of prepared, ready-to-eat foods in U.S. food stores

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Presenter Disclosures

Shannon Zenk

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose
Background

- Foods prepared away from home (FAFH) are a significant part of Americans’ diets
- FAFH sources extend beyond restaurants to stores
- Close proximity of FAFH sources may contribute to popularity
- Disadvantaged neighborhoods disproportionately exposed to fast food restaurants and other prepared food sources
Purpose

As the first nationwide study of prepared food availability in food stores, examine associations between community characteristics and availability of healthier and less healthy prepared, ready-to-eat foods in stores.
Design and Sample

- Two years of cross-sectional, pooled data (2011-2012) from Bridging the Gap Community Obesity Measures Project
- School enrollment zones for nationally representative samples of public high school students
- >6000 food stores in 317 communities in 42 states (analytic sample 5,886 stores)
Measures: Availability of prepared foods

- Bridging the Gap Food Store Observation Form
- 5 prepared foods
- Healthier:
  - Prepared vegetable salad or salad bar
- Less healthy prepared items:
  - Pizza
  - Hot dog/hamburger
  - Burrito/taquito/taco
- Other:
  - Cold sandwich
Measures: Store type

- Supermarkets (n=620)
- Grocery stores (n=620)
- “Limited service” stores (n=4646)
  - Convenience stores (61%)
  - Also drug stores, specialty stores, liquor stores, dollar stores
Measures: Community characteristics

- Racial/ethnic composition (ACS)
  - Majority black
  - Majority Hispanic
  - White
  - Other

- Median household income (tertiles) (ACS)

- Urbanicity (NCES)
  - Urban
  - Suburban
  - Rural
Methods: Data analysis

- Outcomes dichotomized
- Binary logistic regression
- Each model estimated for full store sample and stratified by store type
- Estimated predicted probabilities calculated for contrasting communities of interest
- Sample weights applied
<table>
<thead>
<tr>
<th></th>
<th>All stores (n=5886)</th>
<th>Supermarkets (n=620)</th>
<th>Grocery stores (n=620)</th>
<th>Limited service stores (n=4646)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any prepared food</td>
<td>48.5</td>
<td>90.1</td>
<td>35.6</td>
<td>45.7</td>
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<tr>
<td>Prepared salads</td>
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<td>74.5</td>
<td>16.2</td>
<td>9.2</td>
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<tr>
<td>Less healthy prepared items</td>
<td>26.6</td>
<td>25.3</td>
<td>17.0</td>
<td>27.6</td>
</tr>
</tbody>
</table>
Prepared salad availability

• Overall no associations with urbanicity
  • Among supermarkets, odds in a rural community were 0.49 times the odds in a suburban community.

• Overall odds were lower in both black community (OR 0.23) and Hispanic community (OR 0.34)
  • Among supermarkets, odds were 0.29 and 0.30 in black and Hispanic communities, respectively.

• Overall low-income community had 0.58 times the odds of a high-income community
  • Difference only significant for limited service stores
Predicted probabilities of prepared salad availability

All stores
Supermarkets
Grocery stores
Limited service stores

- Low-income black community
- Low-income Hispanic community
- High-income white community

% of stores
Less healthy prepared food items

- Overall odds of a rural store were 1.43 times higher than a suburban store.
  - Pattern held when stratified by store type

- Overall odds in black community were 0.47 times the odds of a white community.
  - When stratified by store type, significant for supermarkets (OR 0.04) and limited service stores (0.43)

- Overall no association with community income level
  - Among grocery stores, odds of low-income community were 0.25 times the odds of a high-income community.
Predicted probabilities of less healthy item availability
Summary

• Nearly half of stores carried at least one of the prepared foods we assessed.

• Rural supermarkets and stores in low-income, minority communities were less likely to offer prepared salads.

• Less healthy prepared food items were common, particularly in rural communities.
Implications

• Studies focused on traditional fast food restaurants likely underestimate exposure to prepared, ready-to-eat foods, especially in rural areas.

• Efforts to reduce exposure to unhealthy fast food may have limited success if prepared foods within stores are ignored
Implications

• Only 9.2% of limited service stores and 16.2% of grocery stores offered prepared salads.

• Small and limited service store interventions needed to improve availability of healthier options for prepared foods, in addition to packaged foods.
Implications

• Stores in black communities were less likely to carry prepared foods than those in white communities.

• In black communities, odds for carrying prepared salads were generally half the odds for carrying less healthy prepared food item.
Limitations

- Small number of items; thus, conservative
- Patterns of community differences may change with inclusion of additional items
- Assumptions about which prepared foods are healthier and less healthy
- Prepared food prices were not measured
Conclusions

- Less healthy prepared foods are commonly available, especially in rural communities.
- Ability to opt for prepared salads is limited, especially in rural supermarkets and stores in low-income, minority communities.
- Need to improve healthfulness of prepared food offerings