Contextual Approaches to Promoting Healthy Eating

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Food is everywhere and the unhealthy is most accessible
What we eat affects our health

<table>
<thead>
<tr>
<th>Sample size (%)</th>
<th>Relative/neighbor/friend</th>
<th>Fast food/buffet/sit down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number per day</td>
<td>&lt;1 Time/week 489 (62%)</td>
<td>416 (53%)</td>
</tr>
<tr>
<td>Sugar-sweetened beverages</td>
<td>0.76 (1.29)</td>
<td>0.71 (1.26)</td>
</tr>
<tr>
<td>Water</td>
<td>2.78 (1.73)</td>
<td>2.86 (1.69)</td>
</tr>
<tr>
<td>Sweet and savory snacks</td>
<td>1.23 (1.77)</td>
<td>1.08 (1.67)</td>
</tr>
<tr>
<td>Fruits and veggies</td>
<td>1.76 (1.78)</td>
<td>1.84 (1.79)</td>
</tr>
<tr>
<td>Child BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under-to-normal</td>
<td>56.0% (238)</td>
<td>56.8% (212)</td>
</tr>
<tr>
<td>At-risk-for overweight</td>
<td>15.1% (64)</td>
<td>14.5% (54)</td>
</tr>
<tr>
<td>Overweight</td>
<td>28.9% (123)</td>
<td>28.7% (107)</td>
</tr>
<tr>
<td>Adult BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under-to-normal</td>
<td>25.2% (108)</td>
<td>26.1% (97)</td>
</tr>
<tr>
<td>Overweight</td>
<td>34.6% (148)</td>
<td>34.7% (129)</td>
</tr>
<tr>
<td>Obese</td>
<td>33.9% (145)</td>
<td>34.7% (129)</td>
</tr>
<tr>
<td>Excess obesity</td>
<td>6.3% (27)</td>
<td>4.6% (17)</td>
</tr>
</tbody>
</table>

All analyses controlled for income. n.s., not significant.

Ayala et al., Obesity Research, 2013
Where we started

9 episode sit-com

- Randomized controlled trial
- 370 families, including fathers in 25% of the families
- 4-month intervention
- Evaluation at baseline, 4 mos, and 12 mos
- Significant improvements in hypothesized dietary outcomes
- Strong intervention fidelity

ACS RSGPB 113653 (07/07 – 06/12)
Partnered with Clínicas de Salud del Pueblo, Inc.
Ayala et al., Journal of Health Communication, 2014
Horton et al., Salud Publica de México, 2013
Los Garcias at home, and in a grocery store, restaurant and the community

Lesson 1: Importance of modifying the context to support the healthy behavior.

Lesson 2: Importance of modifying behaviors within context.
Working with Latino grocery stores (tiendas)

Study Objective: To promote the sale/purchase and consumption of fruits and vegetables through a store (tienda)-based intervention.

• Study 1: NCI R21 CA120929-01 (09/06-08/09) Vida Sana occurred in North Carolina

• Study 2: NCI R01 CA140326-01 (01/10 – Present) El Valor is occurring in California
Study Design

Time period for Study 1 was shorter (4 month intervention and 10 month follow-up).
Store-directed

Infrastructure to support ready-to-eat FVs

Modifications to butcher

Modifications to prepared foods
Employee-directed

4-part training: DVD and handbook

4 Worksite posters

9 Booster newsletters
Customer-directed

1. Point of purchase
   - 8 aisle violators
   - 60 shelf danglers
   - 1 produce fact sheet
   - 9 recipe cards
   - 9 recipe posters
   - 2 generic posters
   - 1 Banner

2. Food demonstrations
Study 1: Increase of 1 daily serving of fruits and vegetables

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Post-baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>1.87</td>
</tr>
<tr>
<td>Control</td>
<td>2.51</td>
</tr>
<tr>
<td>Intervention</td>
<td>2.81</td>
</tr>
<tr>
<td>Control</td>
<td>2.51</td>
</tr>
</tbody>
</table>

$p \leq .01$

Ayala et al., Public Health Nutrition, 2013
Baquero et al., Health Promotion Practice, 2014
Study 2: Men in intervention condition consumed more FVs 6-mos post-baseline

Adjusted Mean Cups

Men

Women

Control  | Intervention

2.66  | 3.60
2.95  | 2.77
Next steps?

Develop a better understanding of social x physical environment influences in grocery stores and restaurants.
How children and parents influence each other when grocery shopping

Child: Mom, I want chips.

Mom: No, we have chips at home.

C: No, mom, we don’t have these chips at home. We only have the kind that dad likes.

M: Fine, what kind do you want?

C: I want the Cheetos.

M: No, you get that orange stuff everywhere. Pick something else.

C: Can I have Pringles?

M: Yeah – that’s fine. Put it in the cart.
Parent and child gender and number of interactions and purchases

• Parent-Initiated Interactions
  Fathers initiated more request interactions than mothers and products requested by fathers resulted in more purchases than those requested by mothers.

• Child-Initiated Interactions
  Sons initiated more request interactions than daughters and products requested by sons resulted in more purchases than those requested by daughters.

Castro et al., Journal of Consumer Affairs, under review
Next steps

**NIH R21 Eye-tracking study**
(under review, Castro and Ayala PIs)

**NSF in preparation**
(Ayala and Castro, Pis)

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**Study 1:** Extend previous study to include

<table>
<thead>
<tr>
<th>Supermarkets, Female parent</th>
<th>Supermarkets, Male parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiendas, Female parent</td>
<td>Tiendas, Male parent</td>
</tr>
<tr>
<td>n=50</td>
<td>n=50</td>
</tr>
</tbody>
</table>

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**Study 2:**
Field experiments that manipulate aspects of the store (placement, promotion).
Evaluate through eye-tracking and sales.
Restaurant work (briefly)

Study 1

Pilot study with 3 restaurants

Objective: introduce healthy child menus into independent restaurants

<table>
<thead>
<tr>
<th>Johnny's Jr. Meals</th>
<th>$5.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>all meals include small drink</td>
<td></td>
</tr>
<tr>
<td>#1 Bean Cheese &amp; Side of Fries w/ Cheese</td>
<td></td>
</tr>
<tr>
<td>#2 One Rolled Taco &amp; Side of Fries w/ Cheese</td>
<td></td>
</tr>
<tr>
<td>#3 Grilled Cheese &amp; Side of Fries w/ Cheese</td>
<td></td>
</tr>
<tr>
<td>#4 Chicken Strips &amp; Side of Fries w/ Cheese</td>
<td></td>
</tr>
<tr>
<td>#5 Taquito &amp; Side of Fries w/ Cheese</td>
<td></td>
</tr>
</tbody>
</table>

University of California San Diego (CDCH 2011 1952 001); Centers for Disease Control and Prevention (U18 DP003377)

Study 2

Formative phase:
- Customer (with children) dining observations
- Ordering and consumption behavior, and sources of influence

Intervention phase:
- Group randomized controlled trial
- 10 restaurants
- Impact on sales of menu items

National Institutes of Child Health and Human Development (R21 HD071324)
Questions? Comments? Ideas?

Thank you! ¡Gracias!