Title: Chatarra (junk food) and three urban Mexican foodscapes: Distinct neighborhood food environments and eating patterns in an upper-, middle-, and lower-income community in the Mazatlan metropolitan area

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Background / Introduction:

- Mexico ranks among the highest countries globally in prevalence of overweight & obesity (ov/ob) – but at a much lower level of income per capita than other countries with very high obesity prevalence
- Ov/ob are trending toward concentration in low-income communities in Mexico, following the pattern we see in more-developed economies
- In Mexican cities, communities of different socioeconomic status (SES) often have very distinct neighborhood food environments
- This presentation discusses a few of the findings from a formative, ethnographic study conducted in 3 communities of different SES in the Mazatlan metropolitan area

Objective:

- Examine differences in access to various food options in 3 communities—low- middle-, and upper-income—in the Mazatlan metropolitan area
- Explore the interaction between middle-school-age students and families and their food environments in order to gain a more nuanced understanding of facilitators and obstacles to healthy eating habits in communities of different socioeconomic status

Methods:

- Select and recruit for participation 3 middle schools that represent low, middle, and upper SES communities
- Recruit (through the schools) and select 20 families among the 3 communities that represent a variety of experiences typical within each community
- All of the outlets for purchase of food and drink within an approximately ¾-km radius of the 3 participating schools were individually categorized and mapped (by walking the neighborhoods using a GPS device and data collection worksheets)
- Detailed data on availability, quality, prices, and marketing of a variety of foods and drinks was collected in each territory
- Structured and semistructured interviews and participant observation with students, parents, and other stakeholders in the neighborhood food environments examined behaviors and attitudes regarding food purchasing and consumption

The communities:

- “Altamirano” – low SES
- “Reyes” – middle/upper-middle SES
- “Sagrada Familia” – upper SES

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1 Mexico’s GDP/C (PPP) in 2011 was $14,800; the US’s was $49,000 (CIA World Factbook).
Selected Findings:

Types of food outlets in these communities

Supermarket  Abarrotes  Convenience store, chain
Fruteria  Rosticeria  Cerveceria
Carneceria  Tortilleria  Food cart, cold
Food cart, hot  Vending machine  Cocina Economica
Fast food, US/Int’l franchise  Fast food, local  Restaurant
Bar  Other

Density of food outlets in the communities

<table>
<thead>
<tr>
<th></th>
<th>Altamirano (low SES)</th>
<th>Reyes (middle SES)</th>
<th>Sagrada Familia (upper SES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>num.</td>
<td>% of total</td>
<td>num.</td>
</tr>
<tr>
<td>Abarrotes</td>
<td>44</td>
<td>35.48%</td>
<td>23</td>
</tr>
<tr>
<td>Food cart-hot</td>
<td>15</td>
<td>12.10%</td>
<td>13</td>
</tr>
<tr>
<td>Food cart-cold</td>
<td>12</td>
<td>9.68%</td>
<td>7</td>
</tr>
<tr>
<td>Carneceria</td>
<td>6</td>
<td>4.84%</td>
<td>1</td>
</tr>
<tr>
<td>Cocina Economica</td>
<td>2</td>
<td>1.61%</td>
<td>3</td>
</tr>
<tr>
<td>Conven. Store</td>
<td>2</td>
<td>1.61%</td>
<td>8</td>
</tr>
<tr>
<td>FF rest.-US franch</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
</tr>
<tr>
<td>Fruteria</td>
<td>5</td>
<td>4.03%</td>
<td>1</td>
</tr>
<tr>
<td>Vending machine</td>
<td>1</td>
<td>0.81%</td>
<td>4</td>
</tr>
<tr>
<td>Restaurant</td>
<td>0</td>
<td>0.00%</td>
<td>13</td>
</tr>
<tr>
<td>FF rest.-local</td>
<td>9</td>
<td>7.26%</td>
<td>12</td>
</tr>
<tr>
<td>Rosticeria</td>
<td>3</td>
<td>2.42%</td>
<td>3</td>
</tr>
<tr>
<td>Supermarket</td>
<td>1</td>
<td>0.81%</td>
<td>3</td>
</tr>
<tr>
<td>Tortilleria</td>
<td>7</td>
<td>5.65%</td>
<td>2</td>
</tr>
<tr>
<td>Cerveceria</td>
<td>8</td>
<td>6.45%</td>
<td>1</td>
</tr>
<tr>
<td>Bar</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>7.26%</td>
<td>12</td>
</tr>
</tbody>
</table>

Altamirano (low SES) food environment:

- Most striking feature: high density of abarrotes
- 2nd most striking feature: high density of very small businesses selling inexpensive snacks, most of which are calorically dense
- No restaurants or US fast food franchises, chain pharmacies (which usually also sell food in Mexico) or chain convenience stores
• The first supermarket in the area opened in the fall of 2011
• Much greater number of “traditional” food vendors such as tortillerias, fruterias and carnicerias than the other 2 communities
• There is availability of fresh produce throughout the community, and at lower prices than are typical at supermarkets
• But what is more striking is the ubiquity of availability of high-calorie snacks and sugar-sweetened drinks, which are available for sale on every block

Reyes (middle SES) food environment:
• Has about ½ the abarrotes as the low-income community
• High density of hot food carts.
• Variety of restaurants of different types.
• Variety of modern chain businesses that sell food
• Has 3 medium-size supermarkets, which target middle and upper-middle-income consumers
• Notably fewer “traditional” vendors
• There is availability of fresh produce
• Calorically dense sweet and salty snacks and sugar-sweetened drinks are available for sale on almost every block, but the density is lower than in the low-income community

Sagrada Familia (upper SES) food environment:
• School is in a largely residential area with few food businesses nearby
• Also: the majority of the study participants from this community live in a gated community where there are no businesses.
• Very few abarrotes
• Very few food carts
• Much larger density and variety of restaurants
• Greater variety of modern chain businesses that sell food, including several convenience stores and pharmacies, than the middle-income community
• Has the 3 largest/most modern supermarket, which target middle- to upper-middle income consumers
• No “traditional” vendors such as tortillerias, fruterias and carnicerias
• F/V only available at supermarkets
• Least density of availability of calorically dense sweet and salty snacks and sugar-sweetened drinks

“Temptations on all sides”
• A common theme from the interviews in all the communities was that junk food is available everywhere
• This often viewed as a temptation that is too difficult to resist

Grocery shopping patterns in the 3 communities

Consumption patterns (of high-calorie drinks and snacks & fruits and vegetables) in the 3 communities

Reyes (MIC):
• Highest (of the 3 groups) in consumption of soft drinks and sugar-sweetened beverages
• Similar to UIC in consumption of high-calorie meals prepared outside the home
• Similar to LIC in consumption of high-calorie sweet and salty snacks (but types may be different)
• Highest in consumption of pan dulce, cookies, muffins
• Middle in consumption of F & V
• “Consolidating and relishing choice and abundance”
• Little limitation of cal-dense foods, drinks and snacks in effort to adopt healthier eating habits

**Altamirano (LIC):**

• Second (of the 3 groups) in consumption of soft drinks and sugar-sweetened beverages
• Lowest in consumption of high-calorie meals prepared outside the home
• Similar to MIC in consumption of high-calorie sweet and salty snacks (but types may be different)
• Lowest in consumption of *pan dulce*, cookies, muffins
• Lowest in consumption of F & V
• Longing for choice and abundance”
• Very little limitation of cal-dense foods, drinks and snacks in effort to adopt healthier eating habits

**Sagrada Familia (UIC):**

• Lowest (slightly lower than LIC) in consumption of sugar-sweetened beverages (but there is cons. of artif-
sweetened drinks)
• Similar to MIC in consumption of high-calorie meals prepared outside the home
• Lowest in consumption of high-calorie sweet and salty snacks
• Second in consumption of *pan dulce*, cookies, muffins
• Highest in consumption of F & V
• “Taking for granted choice and abundance”
• Notable efforts to limit consumption of cal-dense foods, drinks and snacks in effort to adopt healthier eating habits

**Conclusions/Discussion:**

• LIC had a much higher density of outlets for high-calorie snacks and drinks than the others
  o But also had access to F/V at prices as low or lower than the other communities
• UIC had the lowest density of outlets for high-calorie drinks and snacks
  o Also lowest density of access to F/V
  o Highest density of restaurants
  o Many and varied take-away food options
• MIC had middle density of outlets for high-calorie drinks and snacks
  o Stable and more-varied access to F/V
  o High access to take-away food options
• Overweight is a problem in all 3 communities, but eating behaviors (in terms of cal-dense foods, drinks and
  snacks) differ.
  o UIC is beginning to embrace (healthier) behavioural change
  o LIC eating behaviours, I predict, will become worse before they get better
• These findings suggest that there is a mutual “structuration” of eating preferences and eating environments
  (agents/structures)
  o Points to the need for distinct community-tailored obesity-prevention strategies
Appendix: Food Patterns

- “Food Patterns” method of evaluating styles of food consumption adapted from N.W. Jerome (1982)

- All data collected was analyzed to determine the community’s
  - Primary core foods – items consumed 3 or more times per week
  - Secondary core foods – consumed 1-2 times per week
  - Supplemental foods – consumed 1-3 times per month
  - Occasional foods – consumed several times per year

- In addition: the most common “convenience” foods in the community

- & what are considered luxury foods
References