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[1]
- 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

[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

	Altamirano (low SES)		Reyes (middle SES)		Sagrada Familia (upper SES)	
total # food outlets within approx. 1.75-sq.-km territory	*124*		*108*		*201*	
	num.	% of total	num.	% of total	num.	% of total
Abarrotes	44	35.48%	23	21.30%	3	1.49%
Food cart-hot	15	12.10%	13	12.04%	3	1.49%
Food cart-cold	12	9.68%	7	6.48%	1	0.50%
Carneceria	6	4.84%	1	0.93%	0	0.00%
Cocina Economica	2	1.61%	3	2.78%	10	4.98%
Conven. Store	2	1.61%	8	7.41%	15	7.46%
FF rest.-US franch	0	0.00%	2	1.85%	8	3.98%
Fruteria	5	4.03%	1	0.93%	0	0.00%
Vending machine	1	0.81%	4	3.70%	3	1.49%
Restaurant	0	0.00%	13	12.04%	55	27.36%
FF rest.-local	9	7.26%	12	11.11%	31	15.42%
Rosticeria	3	2.42%	3	2.78%	2	1.00%
Supermarket	1	0.81%	3	2.78%	3	1.49%
Tortilleria	7	5.65%	2	1.85%	0	0.00%
Cerveceria	8	6.45%	1	0.93%	16	7.96%
Bar	0	0.00%	0	0.00%	19	9.45%
Other	9	7.26%	12	11.11%	32	15.92%

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 *carnecerias* 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 *carnecerias*
- 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):

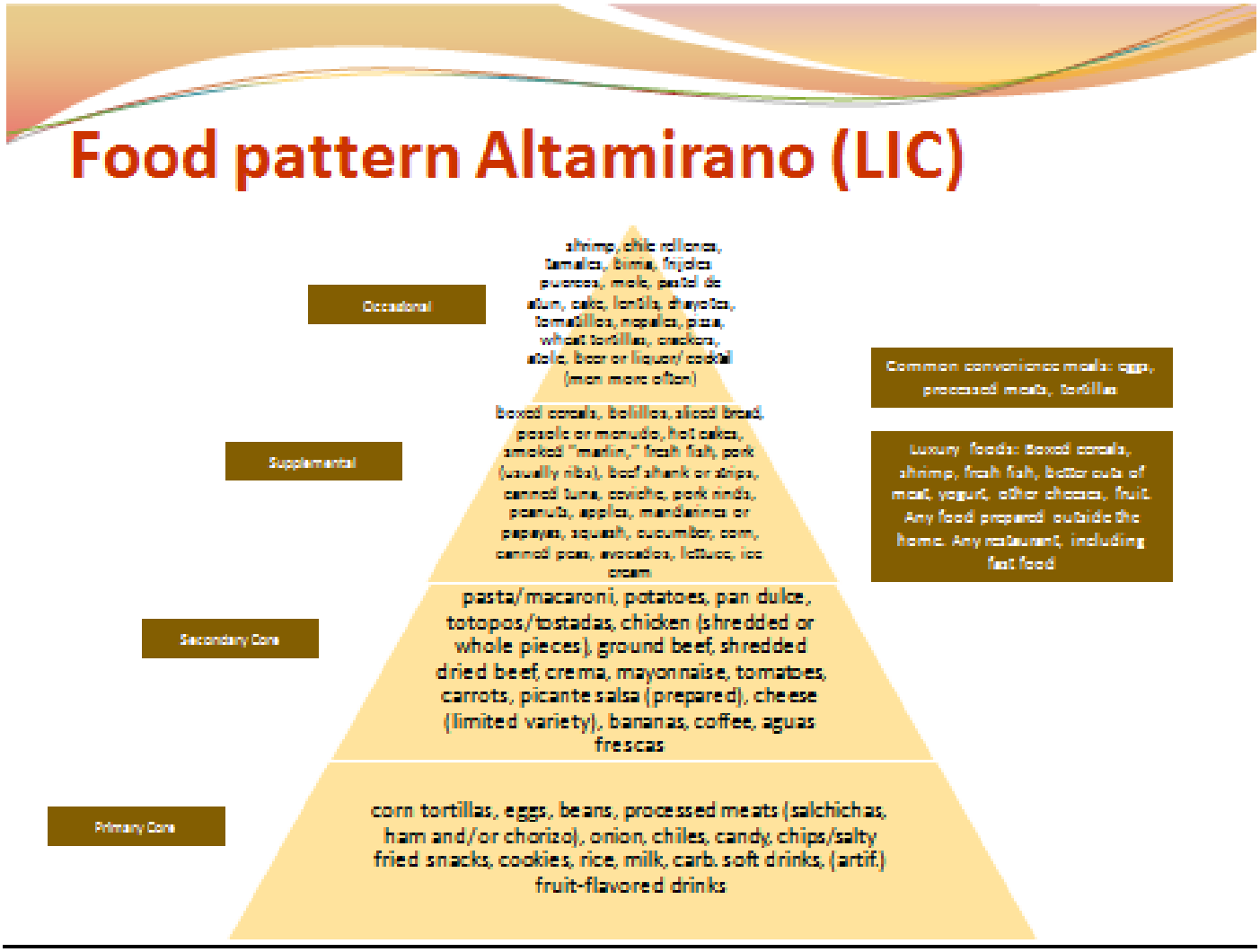
- Lowest (slightly lower than LIC) in consumption of sugar-sweetened beverages (but there is cons. of artif-sweetened drinks)
- Similar to MIC in consumption of high-calorie meals prepared outside the home
- Lowest in consumption of high-calorie sweet and salty snacks
- Second in consumption of *pan 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:

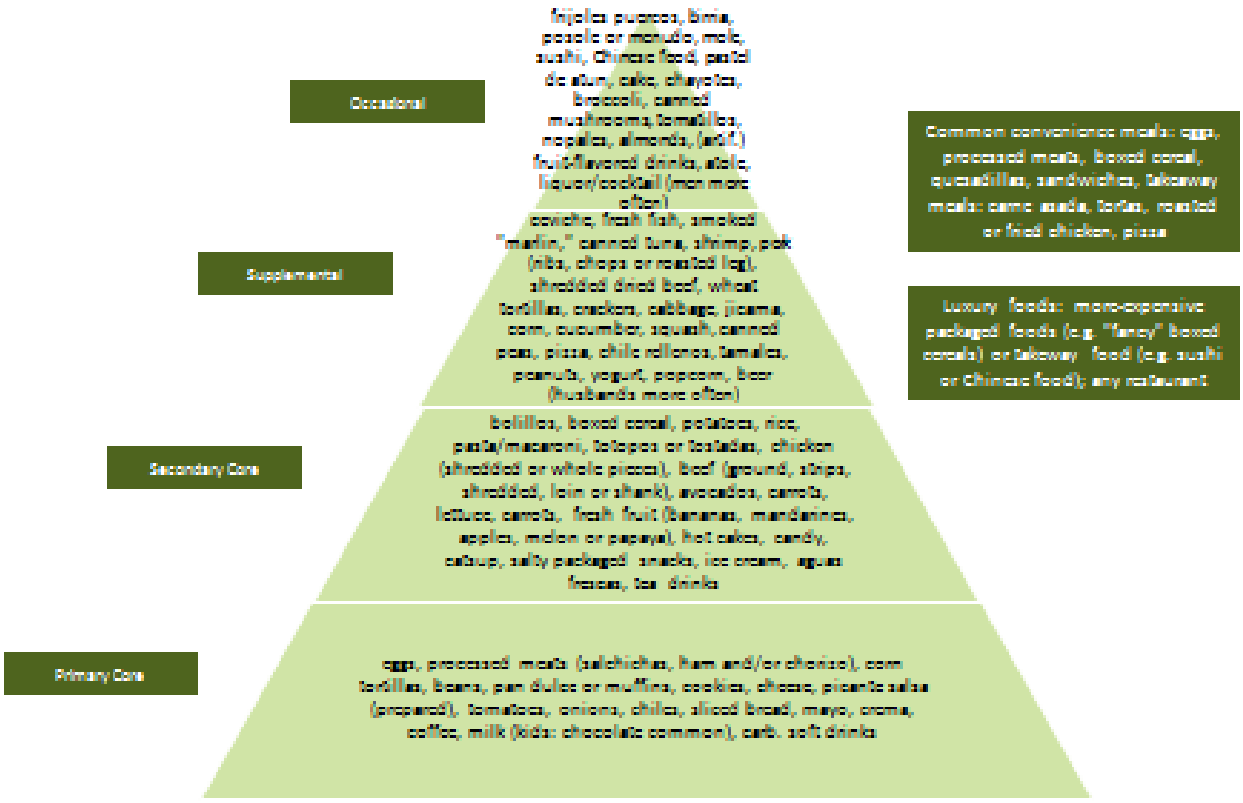
- LIC had a much higher density of outlets for high-calorie snacks and drinks than the others
  - But also had access to F/V at prices as low or lower than the other communities
- UIC had the lowest density of outlets for high-calorie drinks and snacks
  - Also lowest density of access to F/V
  - Highest density of restaurants
  - Many and varied take-away food options
- MIC had middle density of outlets for high-calorie drinks and snacks
  - Stable and more-varied access to F/V
  - 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.
  - UIC is beginning to embrace (healthier) behavioural change
  - 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)
  - Points to the need for distinct community-tailored obesity-prevention strategies

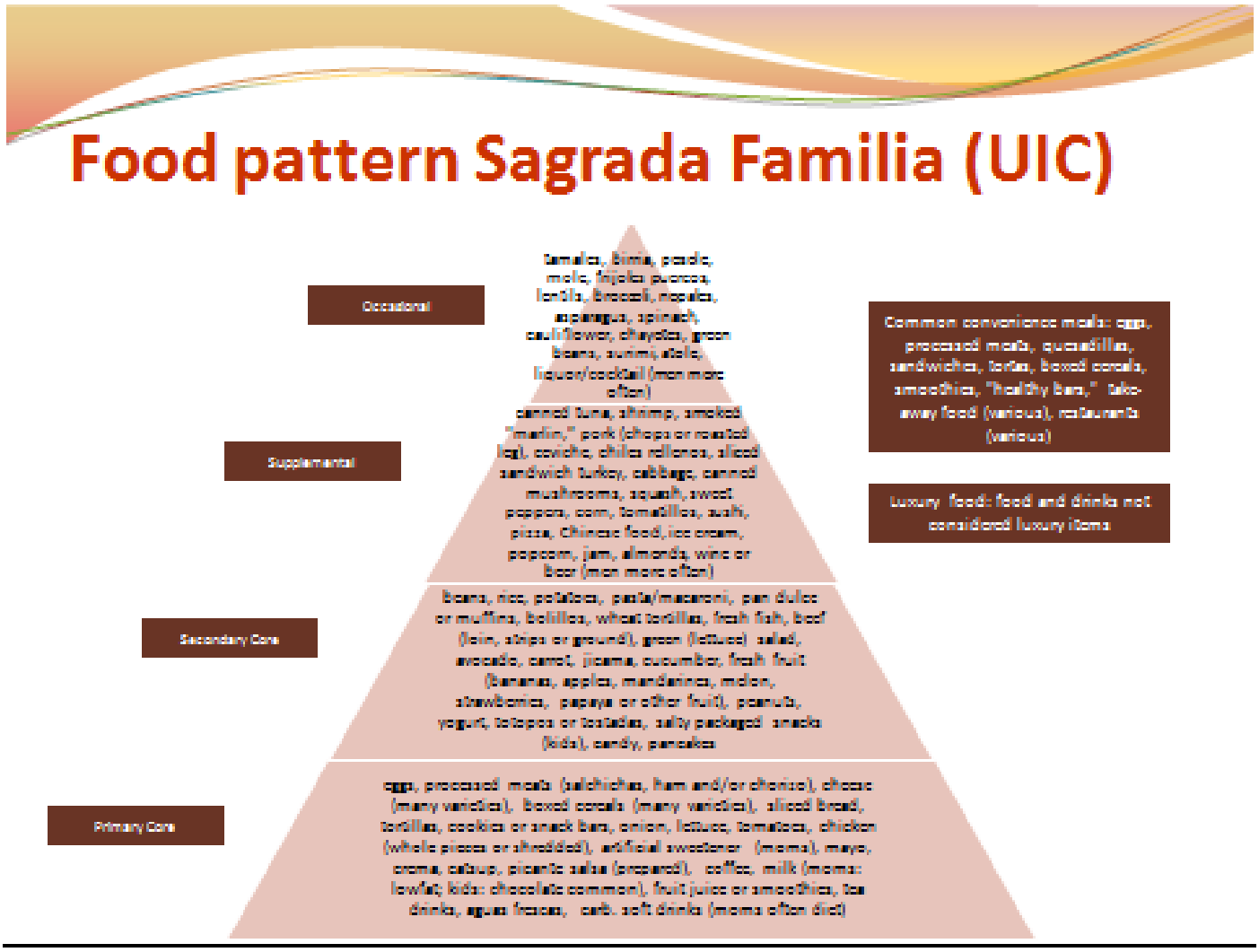
Appendix: Food Patterns

- *"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 cons. 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



Food pattern Reyes (MIC)





References

Jerome, N. J. (1982). "Dietary patterning and change: A continuous process," Contemporary Nutrition, Vol. 7, No. 6.