

Adaptation of the NEMS-S to assess a Mexican-American nutrition environment

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Background

- ☪ Environmental determinations of diet and health
- ☪ Correlated with health indicators
 - body mass index (BMI)
 - presence of CVD and type 2 diabetes risk factors

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Food and Diet

- ☪ Poor access to affordable fresh food sources worsens diets
 - particularly in low income and minority neighborhoods
- ☪ These areas known as food deserts
 - But are they really deserts? Or are we overlooking culturally appropriate foods?

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Food Deserts

- ☪ “Areas that lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up the full range of a healthy diet” (CDC)

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Assessment of Nutrition Environments

- ☪ Some objective measurements of nutrition environment developed:
 - Accessibility
 - Quality
 - Cost
 - Healthiness-of products sold
- ☪ Consumer - community food environ.
 - What consumers encounter within and around retail food outlets

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Culture & nutrition environment assessment

- ☪ Food plays an important role in maintaining cultural traditions and affirming group identification
- ☪ Cultural sensitivity at individual level
- ☪ Lack of cultural sensitivity at neighborhood level

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NEMS-S – most widely used

- Nutrition Environment Measures Survey in Stores
- Glanz K, Sallis JF, Saelens BE, Frank LD. Nutrition Environment Measures Survey in Stores (NEMS-S): Development and evaluation. American Journal of Preventive Medicine, 32: 282-289, 2007.
- Assesses the quality, cost and healthiness of food sold in retail outlets – reliable measure for its purpose and original target population.

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NEMS-S critique

- NEMS-S is an excellent tool for suburban, mainstream neighborhoods
- Inappropriate for Latino environment
 - the type of food items included
 - the type of food retail outlets included

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Does not include culture-specific items

- Stores in Latino neighborhoods are more likely to stock culturally appropriate foods
- Inclusion of culturally preferred items such as tortillas, tropical fruits would give more accurate picture

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Ethnic Markets

- Some ethnic food sources are not captured by existing measures
 - Assumed to have a limited range of products
- However, ethnic food sources
 - sell a variety of products incl. prepared foods
 - are culturally familiar
 - are preferred over supermarkets by some Latinos

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Adapted instrument NEMS-S-Mex

- Several sources for formative research to incorporate cultural food patterns and preferences
- Ethnographic data on perceptions of healthy food
- Survey data from ethnic market managers
- National Health and Nutrition Examination Survey (NHANES) food consumption frequency data
- literature on Mexican foodways

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Original NEMS-S Categories	NEMS-S Mex Additions
Milk	
Fruits	
Vegetables	
Ground Beef	Beefsteak
	Chicken
Hot Dogs	
Frozen Dinners	
Baked Goods	
Beverages	
Bread	
	Tortillas
Chips	
Cereal	Mexican style Cheese
	Beans

Adding fruits and vegetables




Fruits – original NEMS-S	Fruits added to NEMS-S Mex	Vegetables - original NEMS-S	Vegetables - add NEMS-S Mex
Bananas	Grapefruit	Carrots	Avocado
Apples	Papaya	Tomatoes	Chayotes and other squashes
Oranges	Mango	Sweet peppers (green bell)	Spinach
Grapes	Plums	Broccoli	Onion
Cantaloupe	Pineapple	Lettuce	Jicama
Peaches		Corn	Nopal
Strawberries		Celery	Chiles (anaheim, pasilla, poblano)
Honeydew melon		Cucumbers	Tomatillos
Watermelon	10 original fruits + 5 cultural	Cabbage	10 original vogs + 7 cultural
Pears		Cauliflower	

NEMS-S-Mex other modifications

- ↻ expanded the typology of food sources – added carnicerías, panaderías and other ethnic food stores
- ↻ modifying the indicator food categories to account for cultural food preferences (e.g. adding tortillas)
- ↻ modifying foods within categories (e.g. tropical fruits)
- ↻ defining healthy options for common Latino food items (e.g. corn vs. flour tortillas)
- ↻ altering response options to either match the sizes typically found in ethnic stores or for specific ethnic products and brands

Next steps

- ↻ Inter-rater reliability was tested by having raters independently visit a subsample of food sources to conduct the assessment on the same day.
- ↻ Test-retest reliability of the adapted measures was assessed by having a subsample of food sources reassessed within one month after initial observation by the same rater.
- ↻ We assessed 34 food outlets in 2 Phoenix communities with significant Latino populations

Summary

- ↻ Application of the original NEMS-S in some Latino areas would miss the availability of healthy and nutritious foods that are desired—and consumed—by the residents.
- ↻ Healthy versions of foods central to the American diet may be available but is irrelevant to an accurate measure if Latino consumers do not desire or consume these foods.

Food desert or oasis?

It would be misleading to label a nutrition environment deficient, a desert, when judged by mainstream standards of what is healthy and consumed.

Citation

- Winham, D. M., & Quiroga, S. S. (2013, April). Adaptation of the Nutrition Environment Measures Survey-Stores (NEMS-S) to assess a Mexican/Mexican-American nutrition environment. In FASEB JOURNAL (Vol. 27). 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3998 USA: FEDERATION AMER SOC EXP BIOL.
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Thank You!

