

Community Food Resource Mapping in Central City South, Phoenix: An Exploratory Study of Community Capacity Building

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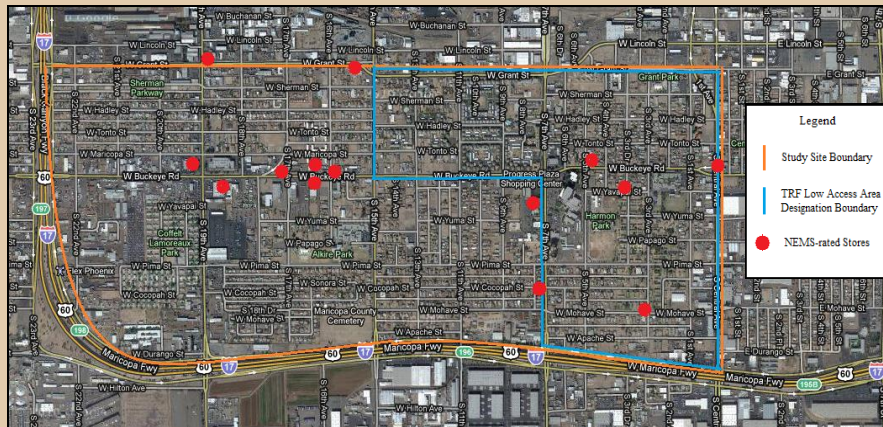
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Background: Access to healthy food in the US is unevenly distributed. Supermarkets and other fresh food retailers are less likely to be located in low-income minority communities, where convenience and dollar stores are more prevalent grocery options¹. Arizona State University researchers have formed a partnership with a community development organization to enhance a community's capacity to meet its health goals through improved access to healthy food. This poster illustrates progress on the first steps toward the goal: 1) examining the locations and types of available food resources; and 2) measuring the availability and quality of food in community food stores using the Nutritional Environment Measurement Survey (NEMS) protocol. This research is key to meeting the community's health goals through strategic, targeted interventions to improve residents' access to food choices.



Study Site: In south-central Phoenix, Arizona, a group of eight low-income neighborhoods (76.2% Hispanic, 16.9% African-American, 4.2% White, non-Hispanic)² have established community goals for healthy eating and living. This community is known as Central City South (CCS), and is a two-square-mile area with a population of slightly over 10,000 people². These urban core neighborhoods have been affected by poverty, ill health, industrialization and perceptions of social squalor since the 1880s³. The Reinvestment Fund (TRF), a development finance corporation partnering in the Fresh Food Financing Initiative and other programs to revitalize low- and moderate-income communities, identified three neighborhoods as Low Access Areas in a nation-wide study of supermarket access⁴. The closest supermarket is 0.85 miles away from the northwest corner of the community (1.4 miles by roadways) and residents' have low ownership rates of vehicles to easily access a grocery store. The US Department of Agriculture defines adequate access to a supermarket as being within one mile⁵.

Figure 1: Map of CCS Community



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Methods: Community food retail stores were identified and enumerated using windshield surveys, web search engines, Maricopa County databases, and store site visits. NEMS survey protocol was used to evaluate the consumer food environment of enumerated stores (n=14) using three dimensions of availability, quality, and price of 11 food categories listed in Table 2. Research teams working in pairs completed in-store surveys to rate the dimensions of each food category using a version of NEMS that has been adapted for food items found in Latino communities. Scores (based on the standard NEMS version) were calculated for each store to indicate relative access to healthy versus unhealthy options within surveyed stores in the community. Data collection took place during October and November 2009 within a 4-week period.

Key Findings:

CCS stores scored between 1 and 23 on the NEMS scoring rubric for healthy foods out of a possible 54 points. The mean score for the 14 neighborhood stores was 10.9.

Only half the surveyed stores had fresh produce in stock, and 3 of the 7 had moderate to low quality produce. Table 1 shows the percentage of produce types available.

Table 1: NEMS Results - Produce in CCS Stores

| Fresh Produce Item | Availability |
|--------------------|--------------|
| Bananas | 64% |
| Apples | 36% |
| Oranges | 29% |
| Grapes | 7% |
| Cantaloupe | 14% |
| Peaches | 14% |
| Strawberries | 7% |
| Honeydew Melon | 7% |
| Watermelon | 29% |
| Pears | 7% |
| Carrots | 21% |
| Tomatoes | 36% |
| Sweet Peppers | 21% |
| Broccoli | 7% |
| Lettuce | 29% |
| Corn | 14% |
| Celery | 29% |
| Cucumbers | 36% |
| Cabbage | 21% |
| Cauliflower | 7% |

Healthy food options were significantly less available in CCS than less healthy options. (Each food category has a defined healthy option and regular option to compare, such as skim or low-fat versus whole milk or low-sugar versus high-sugar cereal.)

Raters found 13 instances of higher prices for healthier options within 6 of the food categories, which is not uncommon, particularly in smaller neighborhood or convenience stores. For example, whole wheat bread was more expensive than white in 80% of the stores where available, and 100% fruit juice was more expensive than a juice drink in 36% of the stores where available.

Table 2 compares the availability of healthy versus regular options available within CCS stores for the remaining food categories.

Table 2: NEMS Results - Healthy Vs Regular Availability

| Food Category | Availability of Healthy Option | Availability of Regular Option |
|----------------|--------------------------------|--------------------------------|
| Milk | 43% | 93% |
| Ground Beef | 0% | 14% |
| Hot Dogs | 7% | 79% |
| Frozen Dinners | 14% | 29% |
| Baked Goods | 7% | 86% |
| Soda | 85% | 92% |
| Juice Drinks | 77% | 100% |
| Bread | 36% | 79% |
| Chips | 21% | 93% |
| Cereal | 57% | 93% |



Next Steps:

1. Conduct GIS analysis of food resource proximity in relation to other neighborhood characteristics, such as ethnicity, education, and income levels.
2. Expand food resources to include restaurants, community gardens, and food box programs.
3. Develop a scoring rubric for the adapted version of the Latino NEMS.

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