

An Assessment of Corner Stores in Phoenix: A Research Brief

Background

National studies have found that low-income neighborhoods have 25% fewer supermarkets than do middle-income neighborhoods, but two to four times as many small retail food stores like corner and convenience stores compared to high-income areas.¹ Although supermarkets are filled with energy-dense, nutrient-poor foods, they also stock a wide variety of nutritious foods and high quality fresh produce. In contrast, energy-dense, nutrient-poor foods compose a much larger proportion of the foods sold in corner stores.² As a result, residents of low-income neighborhoods have limited access to healthy foods.

Programs such as the Healthy Food Financing Initiative³ have been created to decrease the financial risk of establishing healthy food outlets like supermarkets in high-risk areas. However, locating supermarkets in urban areas can be difficult due to barriers such as lack of land space, local regulations, lack of a local workforce trained for specialized supermarket departments, and excessive crime and vandalism that make it difficult to obtain insurance.⁴

In response to these issues, many communities have initiated healthy corner store programs to encourage small-store owners to stock and/or promote healthier foods. These healthy store programs can range from simply introducing a few new healthy products, to displaying marketing materials that promote healthy foods, to providing equipment such as shelving and refrigeration to display and store healthy items.⁵ Healthy store programs have resulted in increased healthy food availability⁶ and sales of healthy foods, as well as increased consumption of healthy foods in some cases.⁷

Auditing Phoenix Stores

The Maricopa County Department of Public Health identified 27 independently-owned corner stores primarily located in a central zone in South Phoenix, with low access to healthy foods. The County contracted with researchers from Arizona State University to conduct audits in these stores, for the purpose of assessing baseline levels of the overall healthfulness of food items stocked prior to initiation of healthy store programs.

Data collectors were trained and inter-rater reliability testing was conducted before beginning audits. Data collectors' responses agreed 100%. Audits were conducted in pairs, with one data collector recording results, and the second double-checking them.

Store audits were conducted using the Short form Corner store Audit Tool (SCAT), a time- and resource-efficient instrument for community-based efforts assessing the healthfulness of foods sold in corner stores.

SCAT Assessment

The SCAT assesses 7 elements:

- Skim or 1% milk
- 5 or more fresh fruits
- 5 or more fresh vegetables
- Frozen vegetables
- Ground meat
- Refrigeration for fruits, vegetables, or meat
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) signs

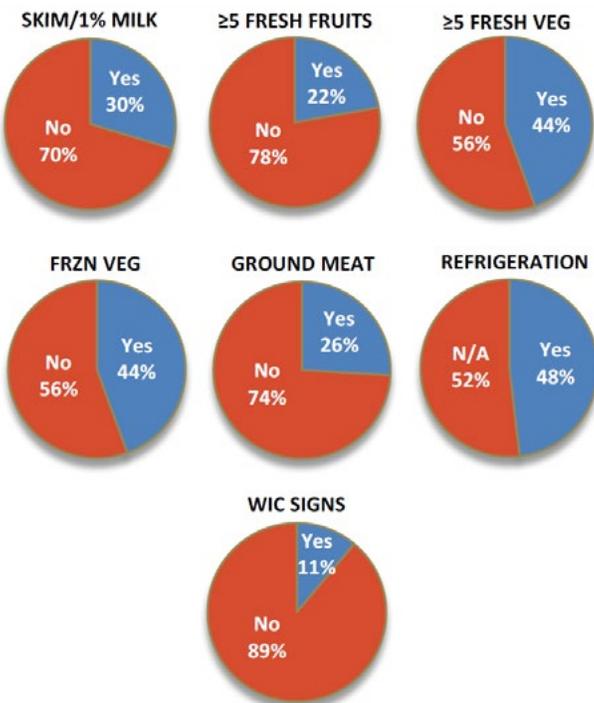


SCAT scores are based on the number of elements present, with each worth 1 point, for a possible range of scores for each store from 0 to 7 points.

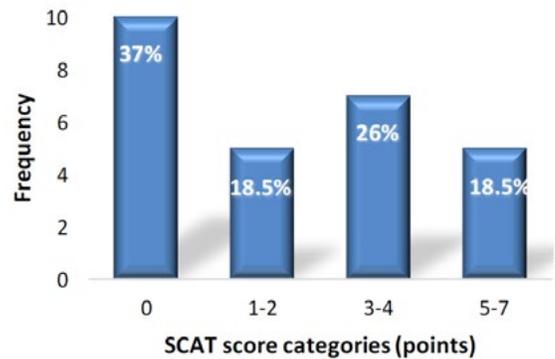
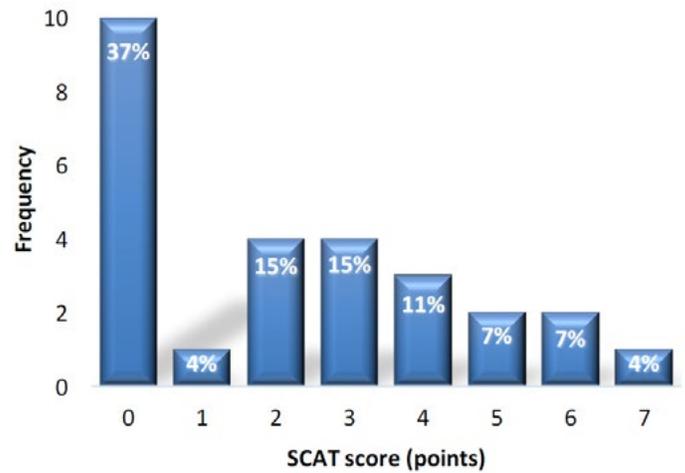
In validation analysis comparing the SCAT to a commonly used and more comprehensive and resource intensive instrument, the Nutrition Environment Measures Survey for Corner Stores (NEMS-CS), the SCAT performed very similarly in classifying the proportion of healthy items stocked.⁸

Results

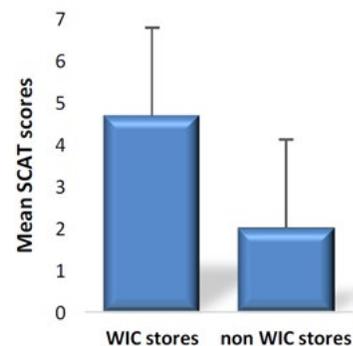
- The SCAT is a rapid assessment tool and on average it took slightly over 4 minutes to complete each audit.
- The most common items stocked were frozen vegetables and 5 or more fresh vegetables. Each was present in 44% of stores.
- Of the 13 stores (48%) that had either fresh fruits, fresh vegetables, or ground meat, all had refrigeration to store those items.
- Only 3 stores (11%) had WIC signs.



- SCAT scores ranged from 0 to 7, with a mean score of 2.30 across all stores. Over 1/3 of the stores scored 0 and only one scored the maximum of 7 points.



- The mean SCAT score of the 3 WIC stores was 4.67 compared to 2.00 for non WIC stores.



Conclusion

In this study of 27 independently owned small corner stores in the Phoenix metropolitan area, 30% of stores scored 4 or higher on the SCAT scale, and 26% of stores stocked at least 3 of the 5 healthy food items audited. The 3 most common food items stocked were fresh and frozen vegetables, and skim or 1% milk. Ground meat and fresh fruits were less prevalent. All stores that stocked perishable items, regardless of their overall SCAT score, had refrigeration for those items.

While the 7 components of the SCAT are certainly not the only features that should be considered when assessing a store's healthfulness, they are effective indicators of the overall amounts of healthy items stocked by small stores. Refrigeration is an important marker of freshness and safety, without which, stores may be unable to keep fruits and vegetables fresh, particularly in Phoenix.



Additionally, in audits conducted by telephone, store employees without any special nutritional knowledge (e.g., knowing whether bread is whole grain)⁸ are able to identify whether each of these 7 indicators is part of their store.

WIC requires its vendors to stock 4 of the 5 food items included in the SCAT: 1% milk, 5 types of fruit, 5 types of vegetables, and 2 types of frozen vegetables. Three of the stores audited had signs indicating they accepted WIC vouchers. Interestingly, only one of these stores stocked all 4 items; it was also the store that scored 7 on the SCAT scale. It may be that the other two stores no longer accept WIC vouchers but have not removed their signs; their status as WIC vendors was not confirmed during audits.

Although scores on the SCAT only range from 0 to 7, some score-based patterns emerged in this sample. Almost 40% of stores scored 0 on the SCAT scale. These stores can be characterized as carrying primarily non-perishable convenience snack items such as chips, baked snacks, candy, and sugary beverages. Stores with scores from 1 to 2 often stock only skim/1% milk and/or 5 or more vegetables, which usually include onions and potatoes.

Five of the seven stores with scores of 3-4 stocked 5 or more vegetables, but only one stocked 5 or more fresh fruits. The distinguishing characteristic of stores with scores of 5-7 was that they all stocked 5 or more fresh fruits; besides one store with a score of 4, no other stores stocked at least 5 fresh fruits. The two stores with scores of 6 were only missing WIC signs, and the stores with scores of 5 were missing WIC signs and either ground meat or skim/1% milk.

The baseline results of these 27 corner store audits can be useful in designing interventions to increase the number and/or types of healthy foods stocked in stores. Since every store that had fresh fruits and vegetables had refrigeration for them, a reasonable intervention may be adding fresh fruits to the stores that already have 5 or more vegetables. For others that do not have refrigeration, the first step toward improving the availability of fresh produce may be to help them obtain adequate refrigeration that would also serve to appealingly display fruits and vegetables.



One limitation of the SCAT is that it does not assess promotions of healthy foods; therefore, interventions focusing on healthy food promotion may not be captured at follow-up by the SCAT. However, healthy promotion interventions may indirectly result in increased stocking of healthy foods.

The stores included in this project are in low- to moderate-income areas, many of which do not have ready access to supermarkets. Piloting healthy interventions in a sample of these stores would provide evidence of their level of effectiveness in the Phoenix area, and could lead to additional healthy initiatives. Healthy interventions in other cities have been shown to effectively increase overall healthfulness of small corner stores, and at least one store in Phoenix that has received funding has increased the types of fruits and vegetables stocked and is an important source of nutritious foods for the surrounding community.

This brief was prepared by R DeWeese, PhD, RDN and P Ohri-Vachaspati, Phd, RD.

Special thanks to Yakira Bergsman and Georgia Brown for conducting store audits, and to the 27 store owners/managers.

Short-form Corner store Audit Tool (SCAT)

Programs such as the Healthy Corner Store Initiative have been widely adopted in recent years to increase the availability of healthy foods in small retail food stores. Valid and reliable measures are necessary to evaluate the effectiveness of these programs. The validated instruments currently available for assessments require in-person evaluations, with surveys taking up to 30 minutes per store to complete. This instrument was developed by researchers at Arizona State University to simplify the process of evaluating the effectiveness of healthy store interventions, and to enable community partners and practitioners to conduct their own evaluations of food access. The SCAT was validated against an adapted version of the Nutrition Environment Measures Survey for Corner Stores, and tested for feasibility of use over the telephone. The SCAT was found to discriminate between corner stores in the top 20% of healthfulness scores from those in the lower 80% with 89% accuracy.⁹

In 2015 a panel of experts was convened by Healthy Eating Research, a program of the Robert Wood Johnson Foundation, to establish a set of minimum guidelines small retail food stores could reach to be classified as meeting basic or preferred stocking levels.¹⁰ Work is currently in progress to test the feasibility of these guidelines, and to assess how the SCAT scores correlate with basic and preferred levels.

References

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Short-form Corner store Audit Tool (SCAT)

Rater ID _____ Store ID _____ Date _____ Start time _____ End time _____

In-store version

Look for the presence of each of the following items:

1. Skim or 1% milk (unflavored)

Yes No

5. Ground meat

Yes No

2. 5 or more different types of fresh fruits

Yes No

6. Refrigeration containing fresh fruits, vegetables,
or ground meat

Yes No N/A

3. 5 or more different type of fresh vegetables

Yes No

7. Does the store have WIC signs?

Yes No

4. Frozen vegetables (any type)

Without sauce, salt, or sugar

Yes No

Yes: 1 point No: 0 points

Total score _____ Scoring: 7 total points possible

Notes

1. Milk: Any size unflavored skim or 1% cow's milk

2. Fresh fruit types: Must be a distinct fruit to count as a "type" (e.g., all apples count as 1 type, regardless of number of different varieties). *Do not* count lemons or limes.

3. Fresh vegetable types: Must be a distinct vegetable to count as a "type" (e.g., all onions count as 1 type, regardless of number of different varieties). *Do* count potatoes and onions.

4. Frozen vegetables: *Cannot* have any added ingredients such as salt, sugar, or sauces.

5. Ground meat: Any type, including beef, turkey, or chicken

6. Refrigeration: Must contain fresh fruits or vegetables, or ground meat. Do not include refrigeration for beverages only.

7. WIC signs: Signs on door, windows, near cash registers, and/or on shelves indicating that WIC vouchers are accepted.