



The Supermarket Gap:

How to Ensure Equitable Access to Affordable, Healthy Foods

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Ensuring access to healthy, affordable foods has become a national priority for public health nutrition.

People living in low-income, high minority or rural areas may have limited access to full service supermarkets and to grocery stores selling healthy foods. The distance to the nearest supermarket or grocery store was found to predict healthier eating and lower risk of obesity and chronic disease. As detailed in the Food Trust Grocery Gap report [1], people who lived near supermarkets consumed more fresh produce and were less likely to be obese. Several studies have found that proximity to supermarkets was associated with lower body mass index and with lower rates of obesity and diabetes among adults. One modeling study estimated that adding a new grocery store to a high poverty neighborhood in Indianapolis would lead to a three pound weight loss among residents.

Bringing more full service supermarkets, grocery stores, and other retail outlets to disadvantaged neighborhoods should improve the residents' diets and health. The Healthy Food Financing Initiative, a partnership between the U.S. Departments of Treasury, Agriculture and Health and Human Services, plans to spend \$400 million in 2011 to bring supermarkets to underserved areas and help convenience stores and bodegas carry more vegetables and fruit. These measures will reduce geographic inequities in access to healthy foods.

What about economic inequities?

Systematic efforts to improve diet quality will need to take economic inequalities into account. Communities may be vulnerable to obesity and chronic disease not because the nearest supermarket is more than a mile away, but because healthier foods often cost more than do less healthy ones. Ensuring access to affordable healthy foods, with the emphasis on affordable, may be key.

Proximity to a supermarket versus economic access

For this, we need to know more about who shops for what foods, where, why and for how much. Researchers often use supermarket location as a proxy measure of food access. Distance to the nearest supermarket is then correlated with diet quality and health. Lacking data on individual shopping behavior, many researchers were forced to assume that people used the nearest supermarket. Yet marketing data show that it is rarely the case. The recent USDA report on food deserts noted that while SNAP participants lived within 1.8 miles of the nearest supermarket, the one they actually shopped at was 4.9 miles away [2].

Food prices could be one reason why people shop where they do. None of the existing studies on food access have distinguished among different supermarket chains [3-7]. The assumption made was that all large supermarkets sold healthy foods, such as fresh vegetables and fruit, at affordable prices whereas small grocery stores, bodegas, and convenience stores did not. Yet consumer



research would suggest that supermarkets have very different prices and cater to different demographics. Depending on store brand, the likely shoppers could vary by education, income, health status, and purchasing power. Reducing geographic disparities in supermarket access is one solution to improving population health. Reducing economic disparities in access to healthy foods may be another.

The Seattle Obesity Study (S.O.S)

The Seattle Obesity Study (S.O.S) has made the critical distinction between the nearest supermarket or grocery store and the one that was actually used by the respondent. Study participants were also asked for the brand names of two stores they had identified as their principal food sources.

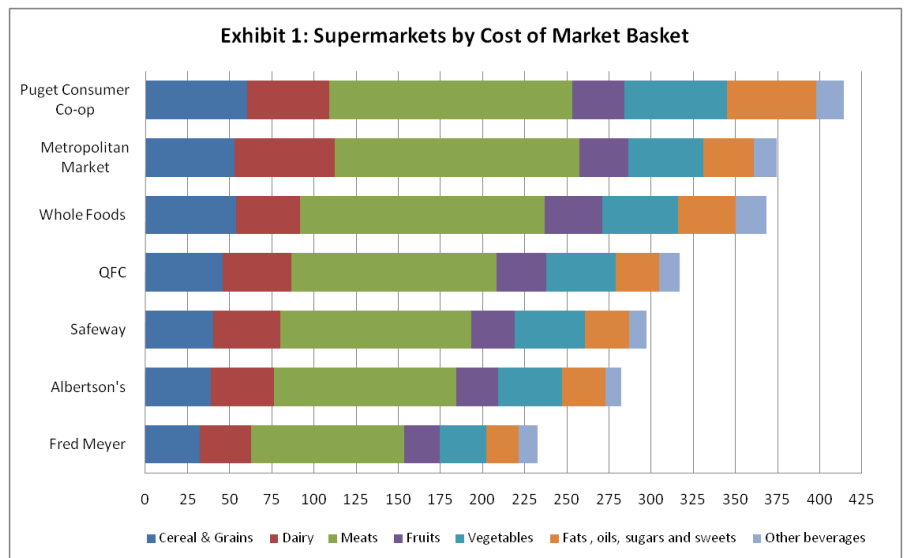
The S.O.S. combined a telephone survey, modeled on the CDC Behavioral Risk Factors Survey System (BRFSS) with novel geocoding techniques and new methods of spatial analysis. Most of the S.O.S respondents (93%) reported that they shopped for food primarily in large supermarkets. Participants provided data on the exact shopping location and frequency, expenditures at each trip, the time spent in the store, the time and distance to the store and the mode of transport (car, walk, bike, and public transport). The 12,000 food sources in Seattle-King County were named, categorized, and geocoded. The data on food sources had been obtained from public health inspectors and were more up-to date and more comprehensive than data usually obtained from business directories. The S.O.S. protocols followed the North America Industry Classification System, which codes chain supermarkets and smaller grocery stores, convenience stores; full service restaurants, quick service restaurants, and other food sources. Supermarkets and grocery stores were coded by name. They included Albertsons, Costco, Fred Meyer, Grocery Outlet, Madison Market, Metropolitan Market, PCC, QFC, Red Apple

Up to 2- fold difference in grocery prices by supermarket chain

Market, Safeway, Top Foods, Trader Joe's, Whole Foods, and Winco Foods. Prices for a market basket of 100 foods were collected from 7 supermarket chains. Shoppers were then analyzed for education, income and obesity rates.

Some supermarkets are cheaper than others

As previously reported [8], Fred Meyer was in the low cost category, Albertsons, QFC and Safeway in the medium category, and Whole Foods, Metropolitan Market and PCC in the upper price category. The total cost of the market basket doubled across food stores – from \$225 at Fred Meyer to \$420 at PCC. **Exhibit 1** shows food prices by food group. Contrary to expectations, the higher prices in upscale supermarket chains were not limited to meat, vegetables and fruit, but were consistent across all food groups. One limitation of the market basket technique was that produce quality could not be taken into account. In some cases, the more expensive supermarkets offered organic meat and higher quality vegetables and fruit. Availability was high: 95% of the market basket foods were found in every supermarket studied [5, 8].



Supermarket proximity does not predict use

Relatively few shoppers (less than 15%) shopped for food within their census tract. Rather, most King County shoppers bypassed the nearest grocery store or supermarket to shop for food elsewhere [9]. Analyses are underway to determine whether those who did not were older, poorer, members of

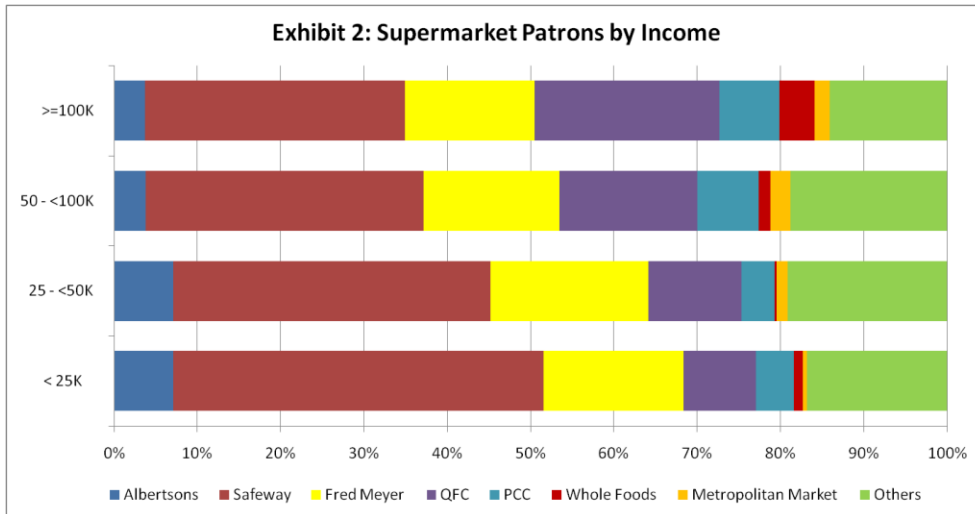


minority groups, or had limited access to transportation, public or private. One caveat is that not all cities are the same. Data for Seattle may not generalize to shopping patterns for New York or Detroit, requiring further study.

Different obesity rates across supermarkets

Given that supermarket choice is influenced by socioeconomic status, analyses turned to obesity rates among supermarket patrons. Mean obesity rates among all supermarket shoppers in the SOS study was estimated at 20.5%. The 2007 BRFSS

phone survey estimated adult obesity rates in Seattle King County at 20%. Further disparities in King County obesity rates were observed by income, education and geographic area. Higher rates of obesity and diabetes were found in the lower income South County than in the more affluent North Seattle.



Shoppers may select supermarkets by price

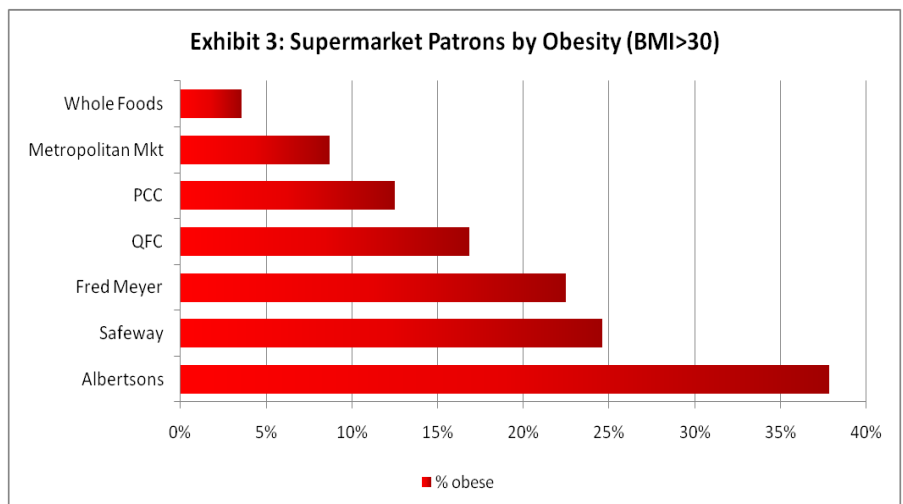
Seattle shoppers may have traveled further to their supermarket of choice for reasons of food quality and price. Some may go further because food was cheaper, whereas others may have gone further because (in their view) food was higher quality and/or more expensive.

In other words, price not distance may be the key factor in supermarket choice. The shoppers in the S.O.S. study had very different profiles by age, education, and income level. Distribution of supermarket patronage by income is shown in

Exhibit 2. In general, lower income participants were more likely to shop at Albertsons and Safeway or Fred Meyer. By contrast, higher income participants were more likely to shop at QFC, Whole Foods, or PCC. Similar trends were observed with the participants' education level. The more educated respondents (those with college degree or higher) were more likely to be patrons of QFC, PCC, Whole Foods, Trader Joe's, Metropolitan Market, and Madison Market.

10 fold disparities in obesity rates by supermarket

Exhibit 3 shows that the obesity rates among supermarket shoppers closely tracked both food prices and incomes. Obesity rates among shoppers listing PCC, Whole Foods, Trader Joes and other upscale supermarkets were around 4-5%. By contrast, obesity rates among shoppers at lower cost supermarkets were much higher, and, in some cases above the King County average. Physical access did not appear to be an issue and the low-cost supermarkets provided ample access to fresh, wholesome foods. The present results suggest that the relative price of healthy foods relative to other options within a given store may affect dietary choices and thereby health.



Conclusion

Access to healthy foods has been defined almost entirely in terms of geographic proximity to full service supermarkets and grocery stores. Physical distance to the nearest store was linked, in many studies, to the residents' diet quality and health. Missing was any information on actual human behavior - where people actually chose to shop for food. A study based in Seattle King County showed that very few people shopped for food in their immediate area. Rather, their choice of supermarkets was guided by a complex mix of attitudinal, demographic and socioeconomic factors. The importance of price was tempered by other variables. The perceived importance of a healthy diet, in particular, was a key factor in supermarket choice.

Importantly, the use of full service supermarkets as primary food sources did not confer protection against obesity. Depending on store type, obesity rates varied from 4% to close to 40%, even though the supermarkets in question had wide availability of fresh, wholesome foods, including vegetables and fruit. Supermarket choice may be another – and previously unacknowledged – manifestation of socioeconomic status.

Supermarkets and grocery stores are places where consumers make most of their decisions regarding food purchases and dietary choices. Identifying behavioral and social processes that underlie such decisions at the point of purchase would help supermarkets become strategic players in the pursuit of health.

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Acknowledgements

Supported by NIH grant NIDDK R01DK076608

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