



Rural Community Member Adaptations to a Recent Food Desert



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Background

Food deserts are urban neighborhoods or rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, food desert communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options. Food deserts bring a unique set of health-related challenges to their residents. Limited access to healthy food, caused by food deserts, are significant contributors to obesity and chronic disease. It is estimated that 2.3 million rural Americans live in food deserts.



Alderson is a small rural town in the southeast region of the state of West Virginia, which sits in the center of Appalachia. Alderson recently became a food desert, by all definitions, when its only grocery store closed. Alderson community members

rallied together to proactively face this impending food desert. They organized themselves by creating a food hub and opening a Green Grocer food coop. **The purpose of this study was to learn how the Alderson community responded to the emergence of the new food desert, when the town's only grocery store closed.**

Methods

- A 17-item survey was designed to investigate individual food acquisition behaviors before and after the emergence of the food desert.
- A list of 27 commonly purchased food items (e.g., milk, eggs, bread, lettuce, cheese, ground beef) was compiled and a price comparison performed among the new Green Grocer food coop, the nearest Walmart store, the nearest discount grocery warehouse called Save-a-Lot, and the nearest IGA grocery store.
- The food hub Green Grocer sales records were obtained through a survey that was completed by the store manager and through procurement of cash register sales receipts.
- Alderson has four fast food restaurants: Big Wheel, Arby's, Stuart's Smokehouse, and Subway. An eight-item survey was designed to determine the food acquisition and costumer sales for the restaurants before and after the emergence of the food desert.
- How many community garden plots and home garden plots were planted before and after the emergence of the food desert was determined.
- Vendor activities at the Alderson Farmer's market were measured before and after the emergence of the food desert.
- All data were compiled into spreadsheets and analyzed with the Systat 13.1 statistical software program (Systat Software; Chicago, Illinois).

Results

- The number of long-distance grocery shopping trips families made after the food desert (3.3 ± 0.4 trips per month) did not change significantly ($p=0.16$) from the number that were made before the food desert (2.8 ± 0.3).
- The estimated cost savings to travel to the nearest grocery store outside of Alderson to buy 27 common food items was \$18.77 dollars (Table 2).

Results (continued)

Table 1: Frequency of Green Grocer Shopping

Visits per Family	Percent
Never	14 (9%)
Once or twice	35 (23%)
Monthly	12 (8%)
Twice a month	22 (14%)
Weekly	63 (40%)
Daily	9 (6%)

Average Green grocer transaction amount = \$13.03

Top Green Grocer food items purchased



Table 2: Food Price Comparisons

Food Item	Green Grocer	Walmart	Save-a-Lot	IGA
Eggs (dozen)	3.75	2.97	2.69	2.25
Milk (gallon)	5.25	2.87	3.09	2.99
Ritz Crackers (13.7 oz)	4.49	2.50	1.79	3.99
Corn Flakes (12 oz)	3.99	2.68	2.99	3.39
Kraft Ranch Dressing (8 oz)	2.29	1.68	0.99	2.19
Jif Peanut Butter (16 oz)	3.29	2.48	1.69	2.89
Red potatoes (lb)	0.75	1.09	0.94	0.99
Watermelon	4.00	1.98	4.99	5.99
Bananas (lb)	0.69	0.54	0.59	0.68
Orange	0.40	0.74	0.31	0.33
Apples (lb)	0.99	1.47	1.49	1.49
Green peppers (lb)	1.09	0.78	2.38	1.79
Pineapple	4.25	2.68	2.98	2.98
Grapes (lb)	2.19	1.98	2.69	2.98
Tomatoes (lb)	1.00	0.98	1.79	1.68
Lettuce (head)	1.89	0.58	1.99	1.69
White bread (loaf)	2.49	1.28	2.49	1.25
Whole grain bread (loaf)	3.59	2.68	2.69	1.49
Cheddar cheese (lb)	5.18	4.93	1.79	6.00
Ground beef (lb)	3.83	3.96	3.99	4.69
Chicken Breast	2.66	1.94	2.99	1.68
Pasta (lb dry)	1.49	1.00	0.89	1.49
Coffee (Maxwell House)	8.11	6.74	5.87	11.29
Sugar (10 lb)	8.38	4.98	5.73	5.89
Flour (5 lb)	3.99	1.56	2.59	2.79
Onion (lb)	1.25	0.88	0.99	0.99
Totals	81.28	57.95	63.41	75.86
Gas Costs	0.72	5.28	5.28	5.28
Totals with Gas Costs	82.00	63.23	68.69	81.14

Results Continued

Restaurant Effects

- Eating at local restaurants (3.0 ± 0.5 meals per week) did not increase significantly ($p=0.85$) after the food desert (3.1 ± 0.5).
- Food desert costumers asked that restaurants sell non-menu items for use in home meal preparation (i.e., eggs, milk, tomatoes, onions, peppers, potatoes, and fruit).



Food Insecurity

- Almost half of the 44% of the town that relied on the food pantry for food, depended more on the pantry for fruit, vegetables, and meat after the emergence of the food desert.
- The number of families that raised a vegetable garden increased by 21% due to the emergence of the food desert.



Conclusions

- Opening a Green Grocer food coop only partially offset the effects of the new food desert, because patrons just used the Green Grocer as a convenience store to purchase fresh fruits, vegetables, and dairy products.
- The food desert caused low-income residents to rely more heavily on food pantry assistance and to turn to home gardening to secure food.
- The number one factor governing food acquisition behavior in a food desert is food pricing, not proximity.

Acknowledgments

Support for this project was provided by the West Virginia School of Osteopathic Medicine and the West Virginia Clinical and Translational Science Institute