Food Environment Complexities and Health of Urban Populations

Shannon N. Zenk
University of Illinois at Chicago

You've got to go out in the suburbs now to get some decent food. And therefore, it's not available for us in this community. By the time you get to that store and get some fresh fruits and vegetables, you're going to pass about 30 fast food joints and about 100 liquor stores. Extremely difficult...we don't have the choices that other communities have. It's like you choosing from fried chicken, fried fish, fried something. It's not really a variety of anything in this neighborhood and which that it was like when you go up North you have so many varieties...like foods that you can choose from, and we should have that same thing.

-Detroit resident
(Kafir Ethn Dis 2004)

- Chicago resident

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98% African American, 32-44% below poverty
Estimated annual $10.74 million grocery expenditure leakage

Greater Englewood, Chicago

- No major supermarket
- Limited availability of healthy foods. For example:
  - 43% sold any fresh produce
  - 9% sold skim milk (83% whole milk)
  - 12% sold whole wheat bread (77% white bread)
- Unappealing environment
  - 50% plexiglass at check-out
  - 67% tobacco or alcohol window ads
  - 53% rated as "dirty"
Food environment

Diet and body weight

Neighborhood variations in food outlet accessibility

Zenk 2005 Am J Public Health

Neighborhood variations in food availability and prices

Low African American (Tertile 1)

Medium African American (Tertile 2)

High African American (Tertile 3)

Zenk 2006 Ethn Dis

Availability of culturally preferred foods

Food environment beyond residential neighborhoods

Grigsby 2010 J Am Soc Nutr

The shelves are dirty. The items that are on the shelves are dusty. I've had a situation one time when I bought some of that instant oatmeal and there were worms in the package. That was some years ago...So, I don't buy anything like that out of there. The most I will buy out of there is a pop, a juice, or something I don't have to eat.
Activity-spaces and residential neighborhoods differ

Food environment → diet
Activity space food environment \(\rightarrow\) diet

- Activity-space fast food outlet density associated with intake of
  - % Saturated fat (+)
  - Whole grain (-)
  - Not fruits and vegetables
- No association between residential neighborhood fast food outlet density and dietary intake
- No association activity-space (or residential neighborhood) supermarket density

Food environment

Diet and body weight

Food environment

Diet and body weight

Stress-food environment interactions

- Predicted probability of high intake of sweet, energy-dense foods

Food environment

Psychosocial stress

Sweet energy-dense food intake

Intervention-food environment interactions

- Does the food environment moderate the effect of behavioral interventions?
- VA MOVE! program

Hypotheses:
- Weight management program participants who lived in resource-rich environments lost more weight and attained greater improvements in metabolic risk factors.
- Among weight management program participants who lost 5% or more of their body weight in the first six months of program participation those who lived in resource-rich environments were more likely to maintain their weight loss and improvements in metabolic risk factors.

Behavioral intervention

Diet and body weight

Food environment

Behavioral intervention

Diet and body weight

Food environment and unfair treatment

- Those shopping at a supermarket were 2.3 times more likely to report unfair treatment than those shopping at another food store type (p<0.01)
- Among supermarket shoppers, African Americans were more likely to report unfair treatment than Whites
Addition of healthy food options (including fruits & vegetables) to WIC food packages
Does this improve fruit and vegetable availability, selection, and prices at retailers?

Availability improved for 5/8 categories of fruits and vegetables
Selection improved for 4/8 categories
Differences by vendor type
Overall small effects
No evidence of differences by neighborhood characteristics

Address social-interactional features of food outlets (e.g., customer service, unfair treatment, safety, ownership)

If it’s dirty I won’t shop there. That’s usually the first thing because I’m pregnant and so I’ve always got to go to the bathroom. So that’s the first thing that I do is go to the bathroom and then I go grocery shopping. If it’s dirty in there then I’m like “I ain’t going, not today.”

I watched the store and it was just like nasty. It was cockroaches running on the floor and as soon as I saw that I called my mama on the phone like, ‘Look Ma, we’re not fixing to get nothing from up out of here because they’ve got roaches and the floor is filthy dirty. I’m gone.”
Academic collaborators including Amy Schulz, Angela Odoms-Young, Elizabeth Tarlov, Stephen Matthews, Lisa Powell

Community collaborators
- Healthy Environment Partnership in Detroit
- Englewood Neighborhood Health Center in Chicago
- Illinois Department of Human Services

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Thank you