Effect of living in an underserved area on fruit and vegetable purchases among households participating in the New Jersey Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

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Background: WIC
• The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is a preventive public health nutrition program that provides services to low and moderate-income pregnant, postpartum and breastfeeding women and young children with, or at risk of developing nutrition related health problems.
• Cash Value Vouchers (CVVs) are provided to WIC participants to purchase fruits and vegetables.

Background: Healthy Food Access
• Research has shown an association between limited access to healthy food choices and increased risk of poor diets and obesity.
• However, the actual effects of living in an underserved area on healthy food access are largely unknown.

Disclaimer
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Purpose

• To assess the effects of living in an undeserved area on fruit and vegetable purchases among New Jersey WIC participants

Methods: Data Sources

• All WIC demographic variables and CVV data were obtained from the New Jersey Department of Health WIC Unit (analysis period: 06/2013—05/2014)
• WIC household addresses were geocoded using ArcGIS
• All statistical analyses were performed using SAS 9.3

Methods: Exposure Variables

• WIC households were divided into 2 groups based on CDC’s Modified Retail Food Environment Index (mRFEI)
  • Households in census tracts that had at least one healthy food store (mRFEI≥1)
  • Households in census tracts without any healthy food stores (mRFEI=0)

Methods: Exposure Variables

\[ mRFEI = 100 \times \frac{\# \text{Healthy Food Retailers}}{\# \text{Healthy Food Retailers} + \# \text{Less Healthy Food Retailers}} \]

• Healthy Food Retailers: supermarkets, larger grocery stores, supercenters, and produce stores
• Less Healthy Food Retailers: convenience stores, fast food restaurants, and small grocery stores with three or fewer employees
Methods: Outcome Variable

• Complete CVV redemption defined as redemption percentage ≥70%

\[ \text{Redemption Percentage} = \frac{\text{total dollar amount of CVVs redeemed}}{\text{total dollar amount of CVVs issued}} \times 100\% \]

Methods: Analyses

• Logistic regression was used to model the association between food access and complete CVV redemption

• Final model adjusted for mother’s age, race, education, and household SNAP participation

Results: Demographics

• 30,078 WIC households
• 11.4% lived in underserved areas
• 73% of mothers do not have a college degree
• 52% of mothers were 25-35 years of age
• 55% of mothers were Hispanic
• 56% of households also received Supplemental Nutrition Assistance Program (SNAP)

Results

<table>
<thead>
<tr>
<th>Percent of WIC households with complete CVV redemption</th>
<th>OR (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Healthy Food Stores At Least 1 Healthy Food Store</td>
<td>83.0% 88.5%</td>
</tr>
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</table>

*p<0.0001 adjusted for mother’s age, mother’s race, mother’s education, and household SNAP participation
Conclusions

• The odds of complete CVV redemption were significantly lower for WIC households in underserved areas.

• Findings suggest that public health efforts aimed at increasing healthy food access are warranted.

• NJDOH has begun addressing the issue through policy change and healthy corner store initiatives in partnership with The Food Trust.

• The study provides a framework for evaluating these efforts.

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