

Welcome to the Food Research & Action Center's fall issue of *ResearchWire*. This quarterly newsletter focuses on the latest research, reports, and resources from government agencies, academic researchers, think tanks, and elsewhere at the intersection of food insecurity, poverty, the federal nutrition programs, and health.



## FALL 2018 IN THIS ISSUE

- **In Focus:** The Importance of the Federal Nutrition Programs for Infants and Toddlers
- **Research Highlights:**
  - Supplemental Nutrition Assistance Program (SNAP)
  - Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
  - Child Nutrition Programs
  - Hunger and Health
  - Special Populations
- **From Children's HealthWatch:** From Disparities to Discrimination

## IN FOCUS

### The Importance of the Federal Nutrition Programs for Infants and Toddlers

Poverty, food insecurity, and poor nutrition have serious detrimental impacts on the health, development, and well-being of young children in the short and long terms.<sup>1</sup> One essential strategy to address these issues is connecting vulnerable young children and their families to the federal nutrition programs, specifically the Supplemental Nutrition Assistance Program (SNAP, formerly called “food stamps”), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Child and Adult Care Food Program (CACFP). These profoundly important programs support healthy growth and development during the early childhood period and beyond.

A new research paper developed by FRAC, with support from the Think Babies™ campaign, provides a brief overview of the importance of early nutrition; briefly summarizes the harmful impacts of food insecurity on infants and young children; and highlights research demonstrating the effective role of the federal nutrition programs during early childhood in improving food and economic security, dietary intake, health, and development. Highlights from, and a link to, the research brief are provided below.

### Early Nutrition is Critical for a Healthy Start in Life

It is widely accepted that the early childhood period sets the foundation for physical, social, and emotional health, as well as establishes dietary patterns and food preferences that can last a lifetime. This period also is a time of rapid brain growth, with more than 1 million new neural connections being formed every second.<sup>2</sup> These

neural connections are stimulated and strengthened when infants and toddlers have nurturing relationships, early learning experiences, and good nutrition.<sup>3</sup>

While good nutrition supports healthy growth and development, poor nutrition in early childhood can negatively impact child health and development in the short and long terms and hinder adult achievement and productivity.<sup>4,5</sup> And unfortunately,

## IN FOCUS

too many infants and toddlers consume diets that fall short of key nutrients.<sup>6</sup> Nutrient inadequacies and deficiencies are a concern for this population, and so too is the overconsumption of calories, sugar, salt, and saturated fat, which can contribute to rapid weight gain and the establishment of preferences for foods of poor nutritional quality.<sup>7,8,9,10</sup> In short, poor nutrition in early childhood — including the prenatal period — can have substantial, long-lasting, adverse impacts, especially for the developing brain.

### Food Insecurity has Harmful Impacts on the Health and Well-Being of Young Children

Adequate calories and nutrients are required to support healthy growth and development, but food insecurity can compromise this. The U.S. Department of Agriculture estimates that 1 in 6 U.S. households with children under 6 years of age experienced food insecurity in 2017.<sup>11</sup> In about half of

these households, one child or more was food insecure.

While food insecurity has direct and indirect consequences across the lifespan, food insecurity — and even marginal food security (a less severe level of food insecurity)<sup>12,13</sup> — is especially detrimental to the health, development, and well-being of children.<sup>14,15,16,17</sup> For instance, young children in food-insecure households are more likely to have poorer overall health, iron deficiency anemia, and developmental problems, and to have been hospitalized, compared to young children in food-secure households.<sup>18,19</sup> These and other consequences have short-term implications, but food insecurity for young children can also put them at a disadvantage later in childhood, and beyond, in terms of unfavorable health and education

---

*The U.S. Department of Agriculture estimates that 1 in 6 U.S. households with children under 6 years of age experienced food insecurity in 2017.*

---

outcomes. For example, living in a food-insecure household at 2 years of age is a strong predictor of low academic scores and high problem behaviors at kindergarten entry.<sup>20</sup>

Research also links food insecurity in households with young children to unfavorable outcomes related to family health and well-being, including increased maternal depressive symptoms and parental arguing.<sup>21</sup> These findings are not surprising given the incredible stress and pressure facing low-income parents who struggle to feed their families.<sup>22</sup> Furthermore, because of limited financial resources, families which are food insecure may use coping strategies to stretch budgets that are harmful for health and nutrition, such as diluting or rationing infant formula<sup>23</sup> or making trade-offs between food and other basic necessities (e.g., housing, medicine).<sup>24</sup>

### The Federal Nutrition Programs Support Strong Physical Health and Nutrition During Early Childhood

There is considerable evidence about the effective role that participation in the federal nutrition programs plays in reducing food insecurity and poverty among families with children, and in providing the nutrients children need for growth, development, and overall health. This is especially true for SNAP, WIC, and CACFP, which are critical nutrition and health supports for vulnerable infants and young children. The following selection of studies illustrates some of the short- and long-term impacts of program participation during the early childhood period.



## IN FOCUS

- Access to SNAP *in utero* and in early childhood (through the age of 5) reduces the incidence of metabolic syndrome (obesity, hypertension, diabetes, heart disease, heart attack) in adulthood, reduces the risk of stunting, and, for women, increases reports of being in good health in adulthood.<sup>25</sup> Program access during these critical time periods in early life also increases economic self-sufficiency later in life for women in terms of increased educational attainment, earnings, and income, and reduces poverty and public assistance program participation in adulthood.
- Children under the age of 4 in food-insecure households who receive SNAP benefits are less likely to be overweight, at developmental risk, and in fair or poor health, compared to children in food-insecure households who are not receiving SNAP benefits.<sup>26,27</sup> In addition, food-insecure children 3 years of age or younger who participate in SNAP have fewer hospitalizations than comparable nonparticipants.<sup>28</sup>
- Prenatal WIC participation is associated with improved birth outcomes, including lower infant mortality rates (especially for African-Americans)<sup>29</sup> and a lower risk of preterm birth, perinatal death, low birth weight, and neonatal intensive care unit admission.<sup>30,31</sup>
- Young children participating in WIC, SNAP, or both programs have lower rates of failure to thrive, anemia, and nutritional deficiency, and lower risk of abuse and neglect, when compared to low-income nonparticipants.<sup>32</sup>
- Prenatal and early childhood participation in WIC is associated with stronger cognitive development at age 2, and better performance on reading assessments in elementary school.<sup>33</sup>
- Child care sites participating in CACFP, especially Head Start centers, serve more fruits, vegetables, and low-fat or skim milk, and fewer sweetened beverages, sweets, and snack foods than nonparticipating child care sites.<sup>34,35</sup>
- Toddlers (between 13 months and 3 years old) in subsidized child care whose meals are supplied by their child care provider — and, therefore, highly likely to be participating in CACFP — are less likely to be in fair or poor health, less likely to be hospitalized, and more likely to be at a healthy weight than similar children whose meals are supplied from home.<sup>36</sup>

### Conclusion

Young children in this country are experiencing high levels of poverty, food insecurity, and inadequate dietary



intake, which can contribute to poor health and development in the short and long terms. Research shows that SNAP, WIC, and CACFP can alleviate these problems during early childhood, and improve overall health and well-being for infants and toddlers. Strengthening and increasing access to and participation in these critical programs would further their role in supporting the physical health, development, and nutrition of our nation's children.

Read the full brief [here](#).

*FRAC wishes to thank the Think Babies™ campaign for their generous support of the research brief. ZERO TO THREE created the Think Babies™ campaign to make the potential of every baby a national priority. Funding partners for Think Babies™ include the Robert Wood Johnson Foundation, which supports the campaign's public education aspects, and the Perigee Fund, which supports the campaign's public education and advocacy aspects. Learn more at [www.thinkbabies.org](http://www.thinkbabies.org).*



Make their potential our priority.





# Research Highlights

## Supplemental Nutrition Assistance Program (SNAP)

**Editor's Note:** See the "Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)" section for a study focused on SNAP, WIC, and home visitation programs.

### Inpatient Medicaid usage and expenditure patterns after changes in Supplemental Nutrition Assistance Program benefit levels

A study in *Preventing Chronic Disease* linked the post-recession decrease in SNAP benefits to increased Medicaid admission growth and \$6.4 billion in additional Medicaid inpatient costs. In April 2009, SNAP benefits were temporarily increased pursuant to the American Recovery and Reinvestment Act (ARRA). This increase was in recognition of the effective and quick stimulative effect of SNAP benefits on the economy, as well as the recognition that hard-hit families needed additional assistance. The temporary ARRA boost ended in November 2013, and benefits were reduced for all SNAP participants. The study examined

the impact of these changes in benefit levels on Medicaid usage and expenditures, using national inpatient data and accounting for demographic, economic, and enrollment factors.

Monthly Medicaid admission growth fell from 0.80 to 0.35 percentage points after the 2009 SNAP benefit boost, but then rose to 2.42 percentage points after the 2013 SNAP benefit decrease. Inflation-adjusted monthly inpatient Medicaid expenditures followed a similar pattern and were associated with \$26.5 billion in savings over the 55 months of the ARRA increase and \$6.4 billion in additional costs over the first 14 months of the SNAP benefit decrease. These overall effects were more pronounced for the Medicaid population than the Medicare population, which was expected given that the latter had less exposure to SNAP. According to the authors, "although alternative causal explanations warrant consideration, particularly those related to state policy changes that could not be examined here, our findings overall suggest that proposed cuts to the SNAP program may increase Medicaid usage and expenditures."



### SNAP benefits and pregnancy-related emergency room visits

A higher SNAP benefit amount was associated with a lower probability of having a pregnancy-related emergency room (ER) claim, based on a study in *Population Research and Policy Review*. The study relied on SNAP and Medicaid administrative data from Missouri in examining the impact of SNAP benefit timing and amount on the probability that a woman 17–45 years of age will visit the ER for a pregnancy-related issue. According to one estimate, a \$100 increase in SNAP benefits will reduce the average number of pregnancy-related claims per 100,000 ER claims by 3.85 percent. There also was evidence that receipt of SNAP benefits later in the month, when other forms of assistance are more likely to be exhausted, was associated with a reduction in pregnancy-related ER claims the week following disbursement. Overall, the study suggests that more generous SNAP benefits may help low-income pregnant women better manage their household budgets to avoid fluctuations in food intake that can contribute to poor health and higher health care utilization.



### [Supplemental Nutrition Assistance Program size and timing and hypertension-related emergency department claims among Medicaid enrollees](#)

According to a study in the *Journal of the American Society of Hypertension*, a higher SNAP benefit amount was associated with a lower probability of having a hypertension-related/hypertensive emergency department (ED) claim. Similar to the pregnancy-related ER claim study already described, the current study used SNAP and Medicaid administrative data from Missouri to examine the relationship between SNAP benefit timing and amount on the probability that a SNAP participant will visit the ED for a hypertension-related/hypertensive issue.

The findings indicated that a \$100 increase in an individual's SNAP benefits will reduce hypertension-related/hypertensive claims by 638 claims per 100,000 ED claims. Additional analyses found that the relationship between reduced ED claims and increased benefits was more pronounced for those receiving a lower (versus higher) SNAP benefit, indicating that those currently receiving less generous allotments would benefit the most from a \$100 increase. Furthermore, there was a significant increase in hypertension-related/hypertensive ED claims in the third and fourth weeks of the calendar month when compared to the first week. However, the results were mixed for an association between the week that SNAP benefits were disbursed and ED claims. In addition to the policy implications of how SNAP benefit timing and amounts may influence health, the authors recommend routinely screening for food insecurity

in clinical settings and connecting at-risk patients to food resources.

### [Perceptions and experiences with SNAP and potential policies: viewpoint from SNAP participants](#)

SNAP benefits are helpful, but inadequate, and SNAP recipients want autonomy in using their SNAP benefits, based on interviews of program participants in a study published in the *Journal of Hunger and Environmental Nutrition*. Fifteen SNAP participants in Omaha were interviewed about their attitudes and experiences with SNAP as well as their opinions about and attitudes toward potential SNAP policy changes. In terms of their perceptions of SNAP, most participants described SNAP benefits as helpful, but most believed that SNAP benefits were inadequate and, therefore, they used a variety of coping strategies to stretch benefits (e.g., using other forms of assistance, purchasing less-expensive foods that were often of lower nutritional quality). Interviews also revealed that SNAP benefits were often exhausted before

the end of the month, which resulted in fewer perishable food purchases (e.g., fresh fruits and vegetables, dairy) at the end of the month. And while SNAP recipients valued high-quality foods (e.g., dairy, fruits, vegetables), these foods were perceived as too expensive and often given lower priority during food shopping.

Additional themes that emerged include that children have priority for eating when food, money for food, or SNAP benefits are diminished, and SNAP recipients deserve discretion on what they choose to purchase with their SNAP benefits. A few participants reported that SNAP benefits were easy to shop with because there are few restrictions on the items that can be purchased with benefits. Participants also raised concerns about having benefits reduced when income increased, thereby losing a critical form of support.

In terms of potential SNAP policy changes, participants had mixed reactions on receiving SNAP benefits twice a month (rather than the current approach of once a month). Opponents of such an approach mentioned that





this would constrain their ability to buy in bulk, be a challenge for people with transportation barriers, and restrict their autonomy. Most participants opposed restrictions on sugar-sweetened beverages and “junk food” purchases with SNAP benefits, but all participants supported policies that provide financial incentives for the purchase of healthy foods. This study, albeit small, provides important information on the experiences of SNAP participants and potential unintended consequences from changes in SNAP policy.

### **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)**

#### [U.S. safety net programs and early life skills formation: results from a prospective longitudinal cohort study](#)

Maternal participation in WIC, the Supplemental Nutrition Assistance Program (SNAP), and home visitation programs had positive impacts on their child’s early life skills development, with the strongest effects for WIC, based on a study published by the National Bureau of Economic Research. Set in Memphis, Tennessee, the study compared early childhood outcomes (up to 2 years of age) between mothers who did and did not participate in the three programs during pregnancy and early childhood. The study focused on four early life outcomes: cognitive skills (e.g., nonverbal problem-solving), receptive communication (e.g., pointing to common objects or pictures of actions in a picture book), expressive communication (e.g., sounds and sound combinations), and an aggregate score of these three outcomes.

Maternal participation in SNAP and home visitation programs had a positive effect on their child’s aggregate development, cognitive skills, receptive communication, and expressive communication, although the effects were modest. Maternal participation in WIC had a significant impact on aggregate development and receptive communication, indicating that maternal participation in WIC has a strong and direct effect on early childhood language development. In general, the effects of SNAP, WIC, and home visitation program participation persisted when accounting for joint participation in these programs.

#### [Does prenatal WIC participation improve child outcomes?](#)

Prenatal WIC participation was associated with a number of favorable mental health and educational outcomes for the WIC recipient’s child later in childhood, according to a National Bureau of Economic Research working paper. Using administrative data on 59,641 children born between

2004 and 2009 in South Carolina, researchers examined the longer-term effects of WIC participation on child mental health and educational outcomes. When compared to their non-WIC siblings, children whose mothers participated in WIC during the prenatal period were less likely to be diagnosed with attention deficit hyperactivity disorder (ADHD), less likely to have a moderate-to-severe infection, and less likely to repeat a grade as of 6–11 years of age. The study also replicated prior findings on the beneficial impacts of prenatal WIC participation on birth outcomes: prenatal WIC participation was associated with reductions in preterm delivery, increases in birth weight, and a lower likelihood of the child being small for gestational age. According to the study’s authors, “these findings demonstrate that a ‘WIC start’ is not only a healthy start, but one that is likely to result in persistent improvements in child outcomes across a range of domains.”



### [Association of participation in a supplemental nutrition program with stillbirth by race, ethnicity, and maternal characteristics](#)

New research in *BMC Pregnancy and Childbirth* suggests that WIC participation is associated with a lower risk of stillbirth for Black women. The study explored racial/ethnic differences in the association between WIC and risk of stillbirth in a number of statistical models using data from the Stillbirth Collaborative Research Network. After accounting for multiple demographic, health, and behavior variables (e.g., maternal age, preexisting diabetes, education, smoking, drug use), WIC participation was associated with lower odds of stillbirth among Black women, but not among White or Hispanic women. According to the authors, the findings are consistent with prior studies of WIC participation that show “more pronounced” positive outcomes for Black participants than non-Black participants. The authors also conclude that the null associations among White and Hispanic women could be a result of unmeasured factors, indicating a need for further research.

### [Special Supplemental Nutrition Program for Women, Infants, and Children \(WIC\) Medicaid II Feasibility Study: Final Report](#)

A new U.S. Department of Agriculture report identified several positive impacts of WIC participation during pregnancy and childhood, including greater breastfeeding at hospital discharge and a child’s increased health care utilization. Using administrative data from WIC, Medicaid, and Vital Records in Missouri and Oklahoma, researchers examined the associations between WIC participation



during pregnancy and childhood on a variety of outcomes, including Medicaid costs, in order to explore the feasibility of replicating and expanding previous WIC studies. In the prenatal analysis, mothers in both states who received WIC during pregnancy were significantly more likely to breastfeed their infant at hospital discharge than nonparticipants. Fee-for-service Medicaid costs in Missouri from birth through 60 days postpartum were \$6,676 for WIC participants and \$7,256 for similar nonparticipants, which was a statistically significant difference. No significant differences in Medicaid costs were observed in Oklahoma. There also were no significant differences in adverse birth outcomes between WIC participants and nonparticipants in either state, which warrants further investigation.

Based on the child analysis, children in both states who participated in WIC were more likely to have had well-child and emergency room visits than similar nonparticipants, and also more likely to be diagnosed and treated for common

childhood illnesses (e.g., ear infection, upper respiratory infection, asthma). Overall, the results demonstrate “that child WIC participants are better connected to the health care system than nonparticipants,” while also “rais[ing] concerns about undiagnosed and untreated illness among nonparticipant children.” Total Medicaid costs for fee-for-service beneficiaries showed considerable variation in magnitude, in statistical significance, and between the two states. Costs were generally higher, on average, for Missouri WIC child participants than nonparticipants, but lower, on average, for Oklahoma participants than nonparticipants. These lower costs in Oklahoma — an unexpected finding — were driven by a small number of nonparticipant children with high inpatient costs. Additional analyses that accounted for these outliers indicated that WIC participation was linked to higher Medicaid costs for most children in Oklahoma.

### Child Nutrition Programs

#### [School nutrition and student discipline: effects of schoolwide free meals](#)

According to a National Bureau of Economic Research working paper, implementation of the Community Eligibility Provision (CEP) for serving school meals was associated with modest reductions in multiple out-of-school suspension rates for elementary and middle school students. (Under CEP, high-poverty schools and school districts offer breakfast and lunch at no charge to all students.) Researchers examined whether CEP impacts school disciplinary outcomes by taking advantage of the staggered rollout of CEP across the nation starting in 2012.

The researchers primarily focused on multiple out-of-school suspensions, which, they note, “are a fairly severe and rare disciplinary outcome in most schools.” After CEP implementation, multiple out-of-school suspension rates fell by about 15 percent for elementary students and 6 percent for middle school students. These reductions were even larger, at about 25 percent, for elementary school students in counties with high rates of food insecurity. No significant effects were observed for high school students. Less severe and more commonly used forms of discipline also were examined, but showed modest results. For instance, in-school suspensions slightly decreased for middle school students, but were unchanged for elementary school students. Overall, the findings offer preliminary evidence that CEP has benefits beyond those observed in other studies.



#### [Center-reported adherence to nutrition standards of the Child and Adult Care Food Program](#)

Child care centers which participated in the Child and Adult Care Food Program (CACFP) had better adherence to CACFP nutrition standards and feeding practices than non-CACFP centers, according to a study published in an [early care and education edition of \*Child Obesity\*](#). (The special issue includes a number of studies focused on CACFP.) In this study of 256 non-CACFP and 87 CACFP-licensed centers in Connecticut that served food, directors were surveyed about the food served, caregiver feeding behavior, nutrition practices and policies, and CACFP knowledge. Directors were to respond to the questions based on how they pertained to preschoolers at the center.

Overall, CACFP centers reported more favorable feeding and nutrition practices than non-CACFP centers. For example, CACFP centers were more likely to serve fresh fruit and whole grains at snack time, serve only low-fat milk, use family style dining, and engage in positive caregiver behaviors (e.g., provider sitting with children, consuming the same food). CACFP centers also were significantly more likely to be compliant with the

new CACFP requirements for serving 100 percent juice, whole grains, and low-fat/fat-free milk, even though data were collected before the new requirements went into effect. About half of non-CACFP centers had never heard of CACFP, despite state licensing regulations requiring compliance with CACFP nutrition standards

for all child care centers serving meals and/or snacks. The authors conclude that given the nutritional benefits of CACFP participation, all states should consider expanding CACFP, requiring compliance with CACFP nutrition standards for all licensed child care settings, and increasing awareness of CACFP for nonparticipating centers.

### Hunger and Health

#### [Impact of federal transfers upon U.S. infant mortality rates: a secondary analysis using a fixed effects regression approach](#)

Research published in *BMJ Open* found an association between increased federal transfers and reduced state-level infant mortality rates. Federal transfers refer to money transferred by the federal government to state and local governments to administer public health, nutrition, and other programs, including Medicaid, the Supplemental Nutrition Assistance Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Researchers estimated the impact of per capita federal transfers on state-level infant mortality rates from 2004–2013 across all 50 states. After accounting for state-level differences, increases in





federal transfers were associated with lower state-level infant, neonatal, and postneonatal mortality rates. Additional analyses found that these effects were especially profound for Black infants. In addition, a \$200 increase in the amount of federal transfers per capita was estimated to save one child's life for every 10,000 live births. The researchers conclude that, "in short, it would appear that federal transfers can prevent the unnecessary deaths of thousands of children, and these benefits should be carefully considered when state officials are deciding whether to accept or reject federal funds."

### [Food insecurity status and mortality among adults in Ontario, Canada](#)

A new analysis in *PLOS ONE* found a strong association between food insecurity and mortality, with a higher mortality risk for those experiencing more severe levels of food insecurity. In a sample of 90,368 adults living in Ontario, researchers using survey data examined the relationship between all-cause mortality and food insecurity, with a focus on whether or not an individual had died since participating in the survey. Individuals were categorized as food secure, marginally food insecure, moderately food insecure, and severely food insecure. After accounting for age, gender, education, and other factors, those experiencing marginal food insecurity, moderate food insecurity, and severe

food insecurity were 28, 49, and 160 percent more likely to have died at any point after the interview, respectively, when compared to those who were food secure. These odds were reduced slightly when examining mortality within four years of the survey. This paper — the first population-based study to examine mortality and food insecurity in a high-income country — adds to the existing body of evidence that food insecurity has detrimental impacts on health and well-being.

### [Food insecurity, healthcare utilization, and high cost](#)

Food insecurity was associated with more emergency department visits, hospitalizations, days hospitalized, outpatient visits, and health care costs in a recent study in the *American Journal of Managed Care*. These associations were observed in a national sample of 11,781 adults even when accounting for socioeconomic factors. In terms of health care costs, food insecurity was associated with significantly greater odds of being in the top 10 percent, 5 percent, or 2 percent of total health care expenditures (i.e., being high-cost health care users). The authors call for more work to integrate interventions focused on the social determinants of health, including food insecurity, in routine clinical care to improve the health of vulnerable populations.

---

## Special Populations

### [The overlooked burden of food insecurity among Asian Americans: results from the California Health Interview Survey](#)

An analysis in the *International Journal of Environmental Research and Public*

*Health* examined food insecurity and acculturation among six Asian American subgroups, and found the highest food insecurity rates among the Vietnamese subgroup and lowest rates among the Japanese subgroup. The study sample included 24,803 Asian Americans who participated in the California Health Interview Survey. Food insecurity rates for subgroups were as follows: 16.4 percent Vietnamese, 8.3 percent Filipino, 7.6 percent Chinese, 6.6 percent Korean, 3.1 percent South Asian, and 2.3 percent Japanese. In terms of acculturation, food insecurity was associated with speaking a language other than English at home (Chinese and South Asian subgroups) and being foreign-born (Chinese, Filipino, South Asian, Japanese, and Vietnamese subgroups). Participation in the Supplemental Nutrition Assistance Program was very low across most subgroups (less than 5 percent), with the exception of the Vietnamese subgroup. Participation rates for the latter were, for example, 15.7 percent among those speaking a language other than English at home and 14.3 percent among those who were foreign-born.

This study provides an important contribution to the food insecurity research literature by providing the first comprehensive assessment of food insecurity among Asian Americans. In addition, researchers examined food insecurity by subgroup, a strength of the current study. Asian American data are often aggregated into one homogenous group, which can mask disparities in vulnerable subpopulations.

## From Disparities to Discrimination



*FRAC wishes to thank Allison Bovell-Ammon, M.Div, Deputy Director of Policy Strategy of Children's HealthWatch; Sabea Evans, BA, Policy and Communications Fellow at the Center for Hunger-Free Communities; Stephanie Ettinger de Cuba, MPH, Executive Director of Children's HealthWatch; and Mariana Chilton, PhD, MPH, Director of the Center for Hunger-Free Communities and Principal Investigator for Children's HealthWatch for contributing this column to ResearchWire.*

Racism and discrimination are root causes of poverty and inequity in the U.S. New research from Children's HealthWatch, [\*From Disparities to Discrimination: Getting to the Roots of Food Insecurity in America\*](#), adds to a growing body of research on the impact of racism by examining the link between experiences of discrimination and food insecurity.

Children's HealthWatch data from 669 families with young children at the Philadelphia Children's HealthWatch site interviewed between 2015 and 2017 show significant associations between reported caregivers' experiences of discrimination based on racial or ethnic identity and food insecurity status. This emerging research is set within the context of research over the past 20 years on the ongoing racial and ethnic disparities identified in national data, as well as the full Children's HealthWatch dataset of families in five cities across the country.

Since 1995, the U.S. Department of Agriculture has consistently reported higher annual rates of food insecurity among Black and Latinx households compared to the national average among all households. The most recent national data from 2017 show 21.8 percent of Black households and 18 percent of Latinx households reported food insecurity, while the national food insecurity rate was 11.8 percent.<sup>37</sup>

Within the Children's HealthWatch data from all five research sites, racial and ethnic disparities among immigrant families, in particular, are striking. For example, among a full Children's HealthWatch sample of more than 60,000 caregivers with infants and toddlers under age 4 interviewed between 1998 and 2018, Black and Latinx caregivers born outside of the U.S. were two to three times more likely to report food insecurity, compared to White caregivers born outside of the U.S., even after controlling for confounders.

The new report provides strong evidence from the Philadelphia site of Children's HealthWatch. In 2015, the research team added a measure of experiences of discrimination to the standard Children's HealthWatch interview. This validated screening tool asked participants how many times, if at all, they experienced a form of discrimination due to race, ethnicity, or color, including being prevented from doing something, being hassled, or being made to feel inferior in a variety of situations, such as in school, at work, or while receiving medical care.<sup>38</sup>

Nearly half of the 669 Philadelphia caregivers interviewed reported they experienced discrimination in their lifetime. In turn, these experiences of discrimination were strongly associated with household and child food insecurity. Caregivers who reported one or more experiences of discrimination in any setting were more likely to report food insecurity compared to those who did not experience discrimination. Further, the report documents the associations between food insecurity and experiences of discrimination by setting. For example, caregivers who reported experiences of discrimination by police, in court, at work, in a store, or at school also reported significantly higher rates of food insecurity, often more than 10 percentage points higher, compared to those who never experienced discrimination in those settings.

In light of evidence on the health and economic impacts of racism and discrimination embedded within our systems and institutions, this research helps confirm a link between discrimination and food insecurity. Policy recommendations that seek to address racism and discrimination in our systems of education, employment, housing, medical care, and policing, and within ourselves, are critical to dismantling racism and reducing food insecurity in the U.S.

## Endnotes

- <sup>1</sup> Hartline-Grafton, H. (2017). *The Impact of Poverty, Food Insecurity, & Poor Nutrition on Health and Well-Being*. Washington, DC: Food Research & Action Center.
- <sup>2</sup> Center on the Developing Child. (2007). *The Science of Early Childhood Development (InBrief)*. Available at: <https://developingchild.harvard.edu/resources/inbrief-science-of-ecd/>. Accessed on September 25, 2018.
- <sup>3</sup> Think Babies. (2018). *Share the Think Babies™ Message*. Available at: <https://www.thinkbabies.org/take-action/toolkit/key-messages/>. Accessed on August 29, 2018.
- <sup>4</sup> Food Research & Action Center and Children's HealthWatch. (2015). *Early Childhood Nutrition Sets the Trajectory for Lifelong Health and Well-Being: WIC and the Child and Adult Care Food Program (CACFP) are Key Sources of Quality Early Nutrition*. Available at: [http://org2.salsalabs.com/o/5118/p/salsa/web/common/public/content?content\\_item\\_KEY=12853](http://org2.salsalabs.com/o/5118/p/salsa/web/common/public/content?content_item_KEY=12853). Accessed on August 29, 2018.
- <sup>5</sup> 1,000 Days. (2018). *Nutrition: A Foundation for Brain Development and Learning*. Washington, DC: 1,000 Days.
- <sup>6</sup> Bailey, R. L., Catellier, D. J., Jun, S., Dwyer, J. T., Jacquier, E. F., Anater, A. S., & Eldridge, A. L. (2018). Total usual nutrient intakes of US children (under 48 months): findings from the Feeding Infants and Toddlers Study (FITS) 2016. *Journal of Nutrition*, published online ahead of print.
- <sup>7</sup> Bailey, R. L., Catellier, D. J., Jun, S., Dwyer, J. T., Jacquier, E. F., Anater, A. S., & Eldridge, A. L. (2018). Total usual nutrient intakes of US children (under 48 months): findings from the Feeding Infants and Toddlers Study (FITS) 2016. *Journal of Nutrition*, published online ahead of print.
- <sup>8</sup> Welker, E. B., Jacquier, E. F., Catellier, D. J., Anater, A. S., & Story, M. T. (2018). Room for improvement remains in food consumption patterns of young children aged 2–4 years. *Journal of Nutrition*, published online ahead of print.
- <sup>9</sup> Sullivan, L. M., & Brumfield, C. (2016). *The First 1,000 Days: Nourishing America's Future*. Washington, DC: 1,000 Days.
- <sup>10</sup> Pérez-Escamilla, R., Segura-Pérez, S., & Lott, M., on behalf of the RWJF HER Expert Panel on Best Practices for Promoting Healthy Nutrition, Feeding Patterns, and Weight Status for Infants and Toddlers from Birth to 24 Months. (2017). *Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach*. Durham, NC: Healthy Eating Research.
- <sup>11</sup> Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2018). Household food security in the United States in 2017. *Economic Research Report*, 256. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- <sup>12</sup> Cook, J. T., Black, M., Chilton, M., Cutts, D., Ettinger de Cuba, S., Heeren, T. C., Rose-Jacobs, R., Sandel, M., Casey, P. H., Coleman, S., Weiss, I., & Frank, D. A. (2013). Are food insecurity's health impacts underestimated in the U.S. population? Marginal food security also predicts adverse health outcomes in young U.S. children and mothers. *Advances in Nutrition*, 4(1), 51–61.
- <sup>13</sup> Lee, J. S., Gundersen, C., Cook, J., Laraia, B., & Johnson, M. A. (2012). Food insecurity and health across the lifespan. *Advances in Nutrition*, 3(5), 744–745.
- <sup>14</sup> Nord, M., & Parker, L. (2010). How adequately are food needs of children in low-income households being met? *Children and Youth Services Review*, 32(9), 1175–1185.
- <sup>15</sup> Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. *Health Affairs*, 34(11), 1830–1839.
- <sup>16</sup> American Academy of Pediatrics. (2015). Promoting food security for all children. *Pediatrics*, 136(5), e1431–e1438.
- <sup>17</sup> Shankar, P., Chung, R., & Frank, D. A. (2017). Association of food insecurity with children's behavioral, emotional, and academic outcomes: a systematic review. *Journal of Developmental and Behavioral Pediatrics*, 38(2), 135–150.
- <sup>18</sup> Cook, J. T., Black, M., Chilton, M., Cutts, D., Ettinger de Cuba, S., Heeren, T. C., Rose-Jacobs, R., Sandel, M., Casey, P. H., Coleman, S., Weiss, I., & Frank, D. A. (2013). Are food insecurity's health impacts underestimated in the U.S. population? Marginal food security also predicts adverse health outcomes in young U.S. children and mothers. *Advances in Nutrition*, 4(1), 51–61.
- <sup>19</sup> Metallinos-Katsaras, E., Colchamiro, R., Edelstein, S., & Siu, E. (2016). Household food security status is associated with anemia risk at age 18 months among low-income infants in Massachusetts. *Journal of the Academy of Nutrition and Dietetics*, 116(11), 1760–1766.
- <sup>20</sup> Nelson, B. B., Dudovitz, R. N., Coker, T. R., Barnert, E. S., Biely, C., Li, N., Szilagyi, P. G., Larson, K., Halfon, N., Zimmerman, F. J., & Chung, P. J. (2016). Predictors of poor school readiness in children without developmental delay at age 2. *Pediatrics*, 138(2), e20154477.
- <sup>21</sup> Johnson, A. D., & Markowitz, A. J. (2018). Food insecurity and family well-being outcomes among households with young children. *Journal of Pediatrics*, 196, 275–282.
- <sup>22</sup> American Academy of Pediatrics. (2015). Promoting food security for all children. *Pediatrics*, 136(5), e1431–e1438.
- <sup>23</sup> Burkhardt, M. C., Beck, A. F., Kahn, R. S., & Klein, M. D. (2012). Are our babies hungry? Food insecurity among infants in urban clinics. *Clinical Pediatrics*, 51(3), 238–243.
- <sup>24</sup> Knowles, M., Rabinowich, J., Ettinger de Cuba, S., Cutts, D. B., & Chilton, M. (2016). “Do you wanna breathe or eat?": Parent perspectives on child health consequences of food insecurity, trade-offs, and toxic stress. *Maternal and Child Health Journal*, 20(1), 25–32.
- <sup>25</sup> Hoynes, H., Schanzenbach, D. W., & Almond, D. (2016). Long-run impacts of childhood access to the safety net. *American Economic Review*, 106(4), 903–934.
- <sup>26</sup> Goldman, N., Ettinger de Cuba, S., Sheward, R., Cutts, D., & Coleman, S. (2014). *Food Security Protects Minnesota Children's Health. Series — Hunger: A New Vital Sign*. Boston, MA: Children's HealthWatch.
- <sup>27</sup> Sheward, R., Ettinger de Cuba, S., Cook, J., Pasquariello, J., & Coleman, S. (2014). *RX for Healthy Child Development: Nutritious, Affordable Food Promotes Health and Economic Stability for Boston Families. Series — Hunger: A New Vital Sign*. Boston, MA: Children's HealthWatch.
- <sup>28</sup> Cook, J. T., Frank, D. A., Levenson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *Journal of Nutrition*, 136(4), 1073–1076.
- <sup>29</sup> Khanani, I., Elam, J., Hearn, R., Jones, C., & Maseru, N. (2010). The impact of prenatal WIC participation on infant mortality and racial disparities. *American Journal of Public Health*, 100(S1), S204–S209.



- <sup>30</sup> Sonchak, L. (2016). The impact of WIC on birth outcomes: new evidence from South Carolina. *Maternal and Child Health Journal*, 20(7), 1518–1525.
- <sup>31</sup> Fingar, K. R., Lob, S. H., Dove, M. S., Gradziel, P., & Curtis, M. P. (2017). Reassessing the association between WIC and birth outcomes using a fetuses-at-risk approach. *Maternal and Child Health Journal*, 21(4), 825–835.
- <sup>32</sup> Lee, B. J., Mackery-Bilaver, L., & Chin, M. (2006). Effects of WIC and Food Stamp Program participation on child outcomes. *Contractor and Cooperator Report*, 27. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- <sup>33</sup> Jackson, M. (2015). Early childhood WIC participation, cognitive development and academic achievement. *Social Science and Medicine*, 126, 145–153.
- <sup>34</sup> Ritchie, L. D., Boyle, M., Chandran, K., Spector, P., Whaley, S. E., James, P., Samuels, S., Hecht, K., & Crawford, P. (2012). Participation in the Child and Adult Care Food Program is associated with more nutritious foods and beverages in child care. *Childhood Obesity*, 8(3), 224–229.
- <sup>35</sup> Andreyeva, T., Kenney, E. L., O'Connell, M., Sun, X., & Henderson, K. E. (2018). Predictors of nutrition quality in early child education settings in Connecticut. *Journal of Nutrition Education and Behavior*, 50(5), 458–467.
- <sup>36</sup> Gayman, A., Ettinger de Cuba, S., March, E., Cook, J. T., Coleman, S., & Frank, D. A. (2010). *Child Care Feeding Programs Support Young Children's Healthy Development*. Boston, MA: Children's HealthWatch.
- <sup>37</sup> Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2018). *Household Food Security in the United States in 2017*. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- <sup>38</sup> Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeau, E. M. (2005). Experiences of discrimination: validity and reliability of a self-report measure for population health research on racism and health. *Social Science Medicine*, 61(7), 1576–1596.