



Inequities in Nutrition and Health: The Case for Intervening During Adolescence

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Disclosure Statement

I have no conflicts to disclose.

Adolescence: A Critical Stage in the Life Cycle

- Adolescence is a period marked by increased autonomy and food purchasing power.^{1,2}
- There is evidence that adolescents from low-income and racial/ethnic minoritized backgrounds have adultified household responsibilities (e.g., food procurement and cooking).³

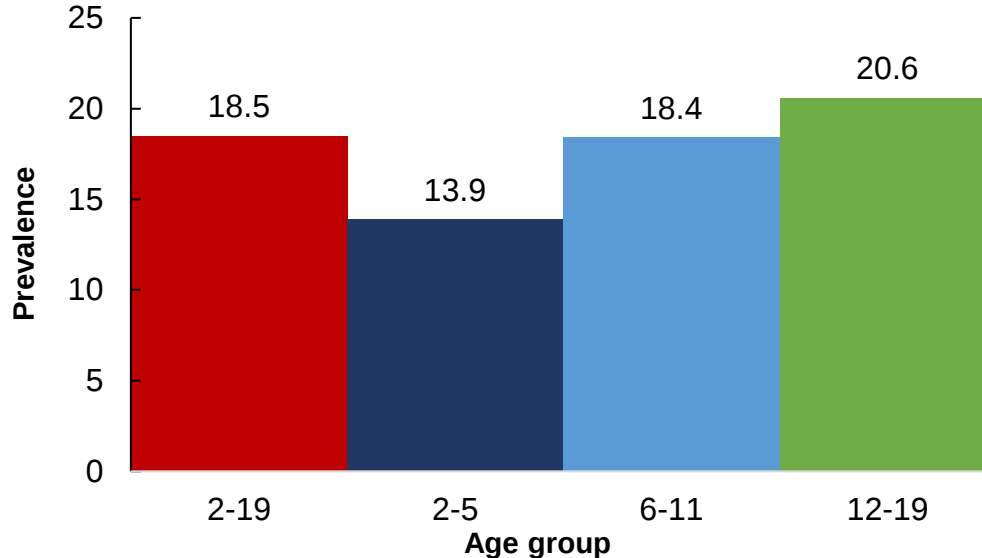
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Adolescence: A Critical Stage in the Life Cycle

- Childhood obesity prevalence is highest amongst adolescents (12-19 years).^{1,2}

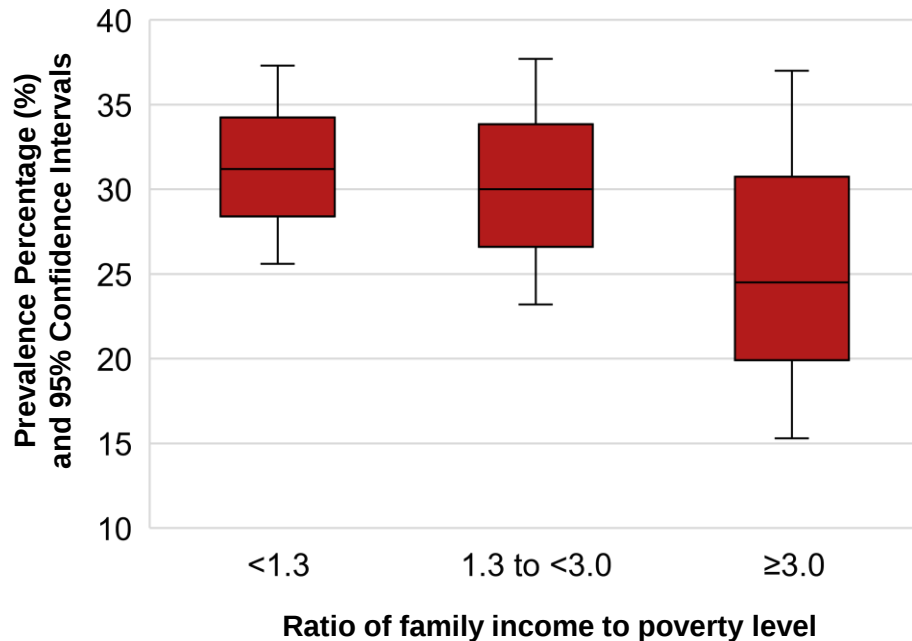


- Obesity in adolescence is associated with increased risk of prediabetes in adulthood.³

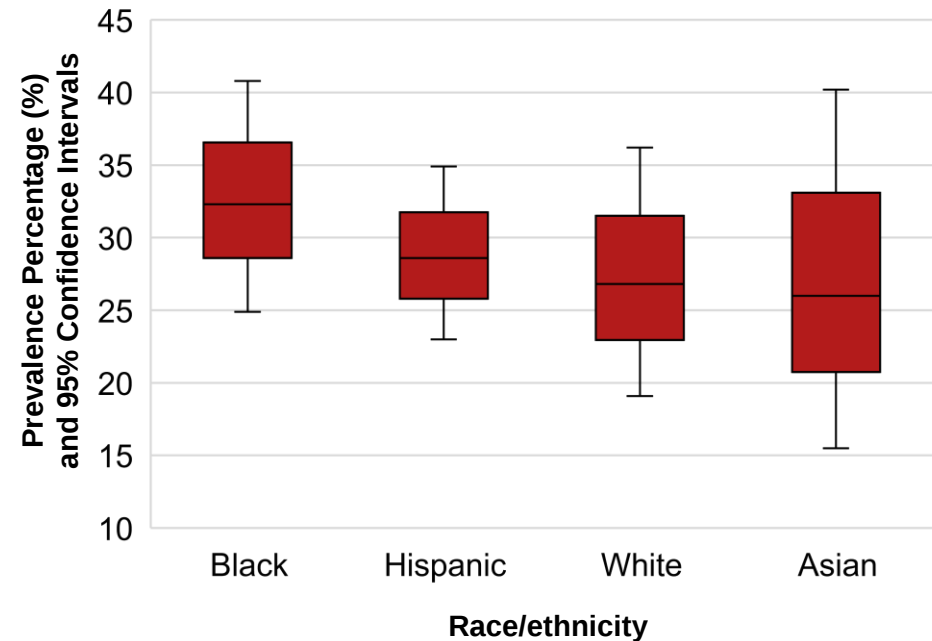
1. Fryar CD, Carroll MD, Afful J. *NCHS Health E-Stats*. 2020.
2. Hales CM, Carroll MD, Fryar CD, Ogden CL. 2017.
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Disparities in Prediabetes Among Adolescents

Prevalence of prediabetes among adolescents (12-19 y/o) by household income (NHANES 2015-18)

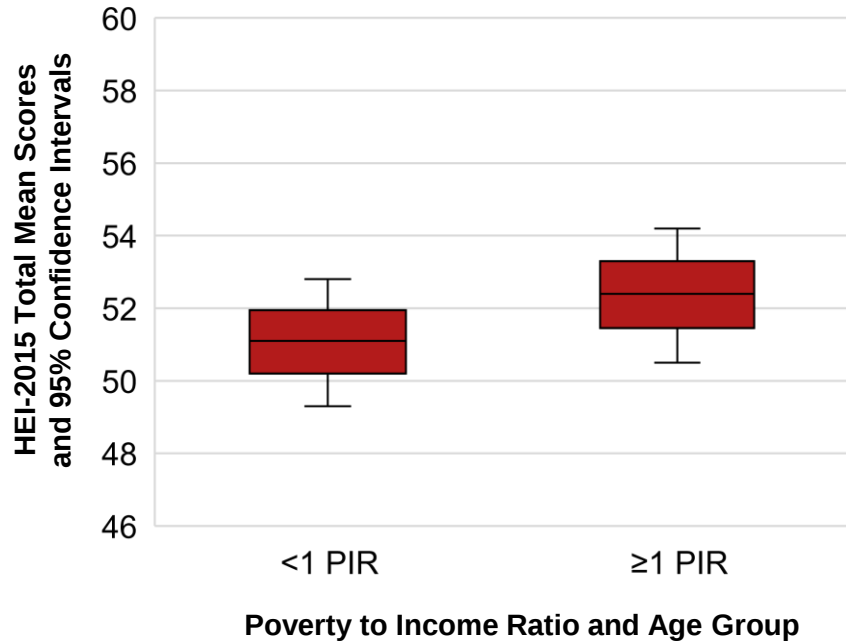


Prevalence of prediabetes among adolescents (12-19 y/o) by race/ethnicity (NHANES 2015-18)

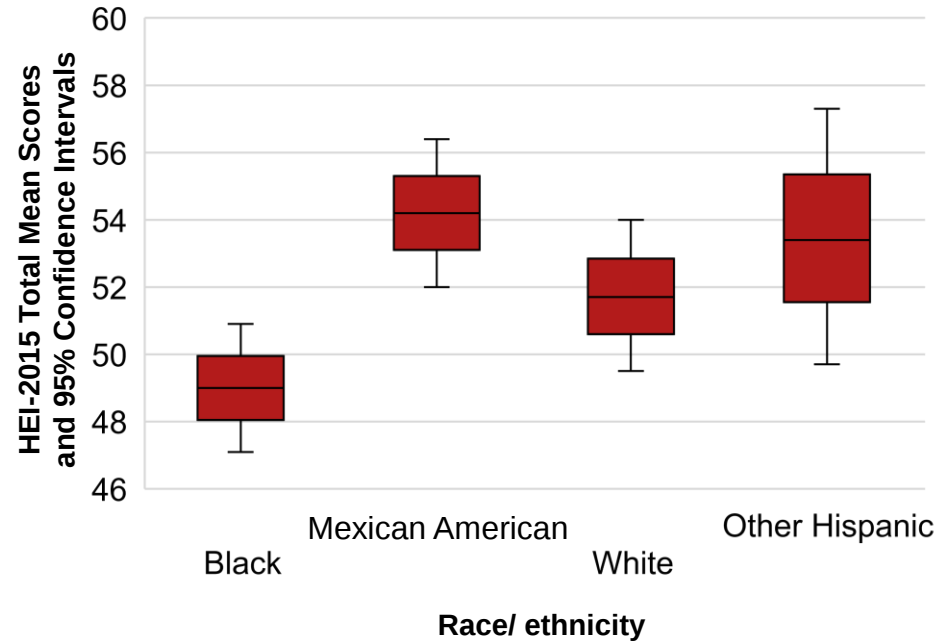


Disparities in Healthy Eating Index (HEI) Scores

Adolescent (12-18 y/o) HEI-2015 score
by poverty threshold (NHANES 2009-14)



Adolescent (12-18 y/o) HEI-2015 score
by race/ethnicity (NHANES 2009-14)



Snacking is an Important Eating Occasion

- Among U.S. adolescents, 23% of energy intake is consumed during the snack eating occasion.¹
- On a given day, 73% of U.S. adolescents consume items from the 'Snacks & Sweets' What We Eat In America category (e.g., chips, cookies).²



1. U.S. Department of Agriculture, Agriculture Research Service. *What We Eat in America*. 2022.
2. Gangrade, N.; Figueroa, J.; Leak, T.M. *Nutrients*. 2021.

Disparities in Snacking Behaviors



Among U.S. adolescents, those from low-income homes (compared to high-income homes) have a:

- Higher consumption of added sugar
- Lower consumption of whole grains, fruit, and fiber

Considerations for the Urban Food Environment

Corner Stores¹

- There are a greater number corner stores in low-income communities compared to higher income communities.
- Corner stores often stock items with little nutritional value.
- Youth frequent corner stores for snacks.

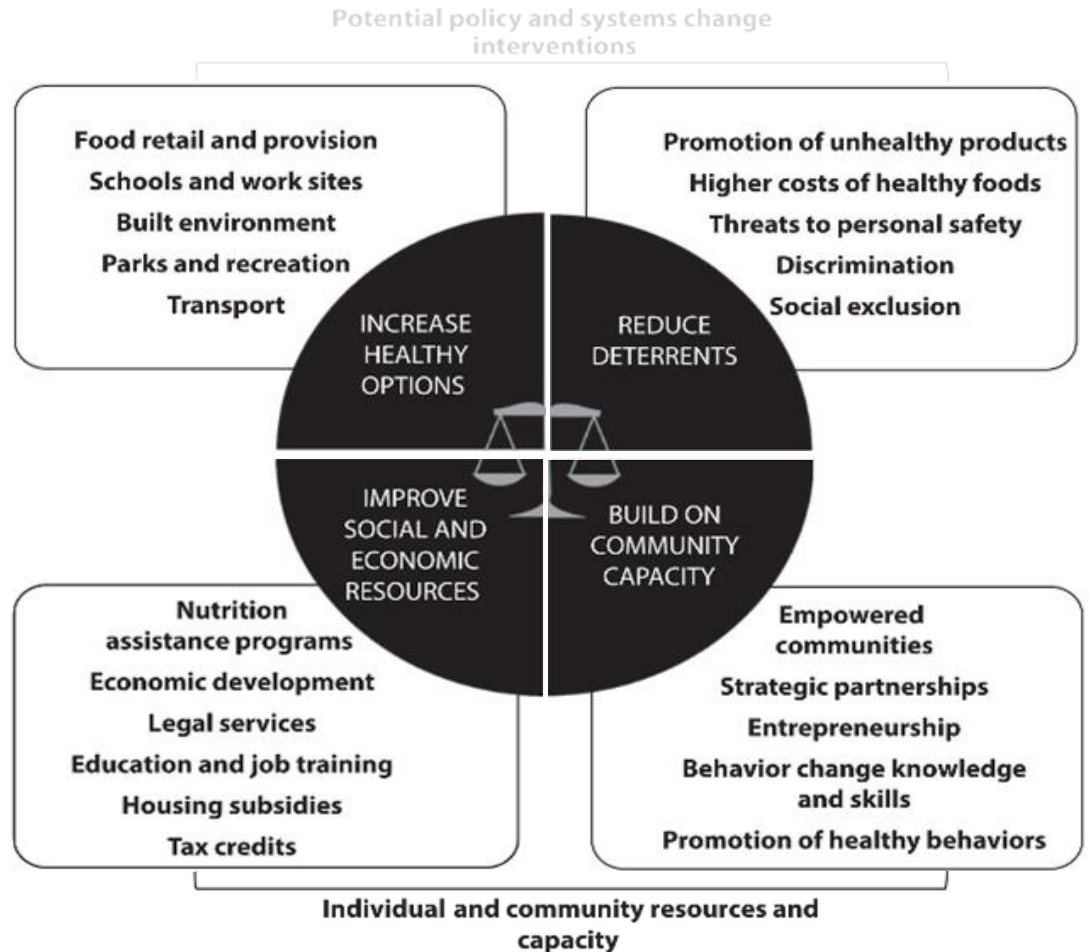
Quick Service Restaurants (QRS)²

- The percentage of QSR near public schools in urban communities (400m) was 25% in 2006 and 34% in 2018.

1. Leak TM, Setiono F, Gangrade N, et al. *Int J Environ Res Public Health*. 2019.

2. Olarte DA, Petimar J, James P, et al. *J Acad Nutr Diet*. 2023.

Equity-Oriented Obesity Prevention Action Framework



Intervening in Schools

Advanced Cooking Education (ACE)

Who: 7th and 8th grade students

Where: Title 1 funded middle schools in New York City

What: A 12-week culturally-tailored 4-H after school club that consists of:

- **Wellness and Professional Development Session:** mindfulness, exposure to careers in food and nutrition, nutrition lesson.
- **Culinary Session:** prepare plant-based ethnic dish (at home, self-guided).



Dissemination and Implementation Plan

- Pursue funding from the New York City Department of Youth & Community Development for 4-H educators to implement ACE.
- Inform school lunch requirements (plant-based Fridays).
- Adoption of ACE by National 4-H.



Intervening in Clinical Settings

Black Girls for Wellness (BGW)

Who: Black adolescent girls (12-18 years) at risk for type 2 diabetes

Where: Online

What: A 12-week culturally-tailored telehealth lifestyle intervention that consists of:

- **Wellness Session:** girl chat, Afrocentric dance class, nutrition lesson
- **Culinary Session:** prepare plant –based ethnic dish (at home, self-guided)



Dissemination and Implementation Plan

- Explore New York Presbyterian adopting BGW, especially at Weill Cornell Medicine and Columbia University Irving Medical Center.
- Provide referrals to Afrocentric dance classes to address lack of safe spaces for physical activity in predominately Black neighborhoods.
- Increase use of grocery delivery services, especially among those living in limited neighborhoods with limited access to healthy foods.



Intervening in Community Centers

Youth Engagement and Action for Health! (YEAH!)

Who: High school students

Where: Boys and Girls Club in Harlem, NY

What: A 12 session youth advocacy intervention that consists of:

- **Nutrition lessons**
- **Ethnographic observations:** document facilitators and barriers for adolescents to make healthy choices in corner stores and restaurants.
- **Presentations:** Make suggestions to key stakeholders on ways to improve the food environment.



Tuft Family Foundation

New York City, NY

Dissemination and Implementation Plan

- Pursue funding to implement and evaluate YEAH! at Boys and Girls Clubs across the U.S.
- Collaborate with corner stores and restaurants to implement suggested changes.
- Inform local policies to promote a healthier food environment.



Academic Infrastructure to Promote Equity



Qiana Mickie, Director of NYC Mayor's Office for Urban Agriculture visits Salvation Army urban garden site.



New York Lt. Gov. Antonio Delgado meets with ARC co-directors, discusses sustainability, equity.

The Action Research Collaborative (ARC)

- Launched January 2022.
- Provides infrastructure for faculty, community organizations, and policymakers to collaborate on pressing societal issues.
 - Annual ARC Symposium.
 - Support for faculty who are underrepresented in higher education.
 - Evaluation unit.

Academic Infrastructure to Promote Equity

ARC Partners

- New York City Health Department
- Field and Fork BUFFALO, NY
- Boys and Girls Club of Harlem MANHATTAN, NYC
- Salvation Army QUEENS, NYC
- Tree of Life Center QUEENS, NYC



ARC Funding

- New York State Legislative Budget Gus Schumacher Nutrition Incentive Program (GusNIP)
- Internal Grants



Summary

1. Adolescence is a critical stage in the lifecycle and those from low-income communities & racial/ethnic minoritized backgrounds are at greatest risk for poor health behaviors.
2. Environmental changes are necessary to remediate disparities.
3. Academic infrastructure is needed to advance equity efforts.



Funding Acknowledgments



United States Department of Agriculture
National Institute of Food and Agriculture

Gus Schumacher
Nutrition Incentive
Program (GusNIP)



National Center
for Advancing
Translational Sciences



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