The New Jersey Child Health Study: A Research Brief
School Policies and Environments

October 2019

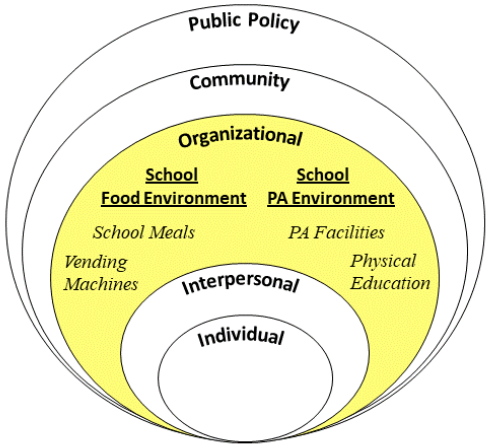
New Jersey Child Health Study

Introduction

Many factors influence children's health behaviors and health outcomes. The Social Ecological Model (SEM) groups these factors into interactive layers, creating a framework for understanding their influence and for designing interventions to achieve positive change. The layers of influence in the SEM include individual, interpersonal, organizational, community, and policy factors (see figure).

The **New Jersey Child Health Study (NJCHS)** was designed to examine how specific layers of the SEM, particularly food and physical activity environments in schools and communities, affect obesity outcomes in children.

In this brief, we focus on **schools**, part of the organizational layer of the SEM. Schools provide many unique opportunities for promoting health. During the academic year, students spend a large part of the day in school and consume up to two meals and a snack in the school setting each day.



Social Ecological Model

As a result, local and national policies have sought to improve food and physical activity environments in schools to increase students' opportunities to practice healthy behaviors. Such efforts include increasing the number of healthy options in vending machines, improving the nutritional quality of lunch and breakfast served in school, and providing more opportunities for physical activity in and outside the classroom.

Results from the NJCHS suggest that **food and physical activity environments, both in schools and in surrounding neighborhoods, play a significant role in influencing children's health** and health-related behaviors.

This brief summarizes key findings from the NJCHS thus far and lays out actionable steps for developing policies and programs to improve the health and wellbeing of children.

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Key Findings:

School Meal Participation

- The Healthy Hunger-Free Kids Act (HHFKA) required schools to offer healthier school meals starting in school year 2012-13. We found that school lunch meal participation did not change between school years 2008-09 and 2014-15. Contrary to many social media reports, students continued to participate in school lunches at the same rate (70%) following the introduction of healthier meals.[1]

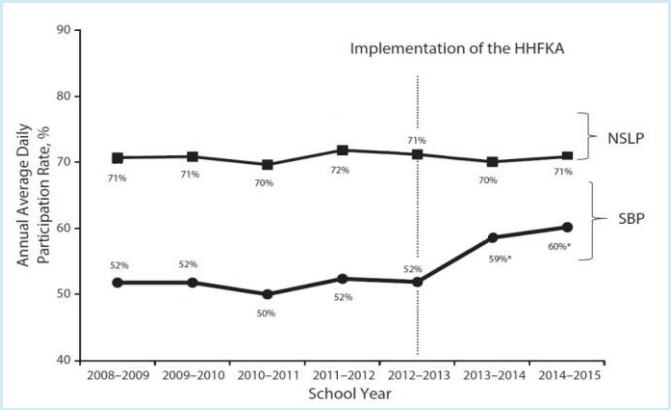
Children adapt to healthier school meals.

- A significant increase in School Breakfast Program (SBP) participation was observed post-HHFKA implementation which included the Community Eligibility Provision.[1]

Making it easier for children to enroll in the SBP may increase participation rates.

- Children of parents who perceived school meals to be healthy were significantly more likely to eat school lunch compared to children of parents who perceived lunch to be unhealthy.[2]

Communicating with parents about healthy improvements to school meals may be critical for utilization of school food programs.



School Lunch and Breakfast Program Participation Before and After Implementation of the Healthy Hunger Free Kids Act (HHFKA)

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Key Findings:

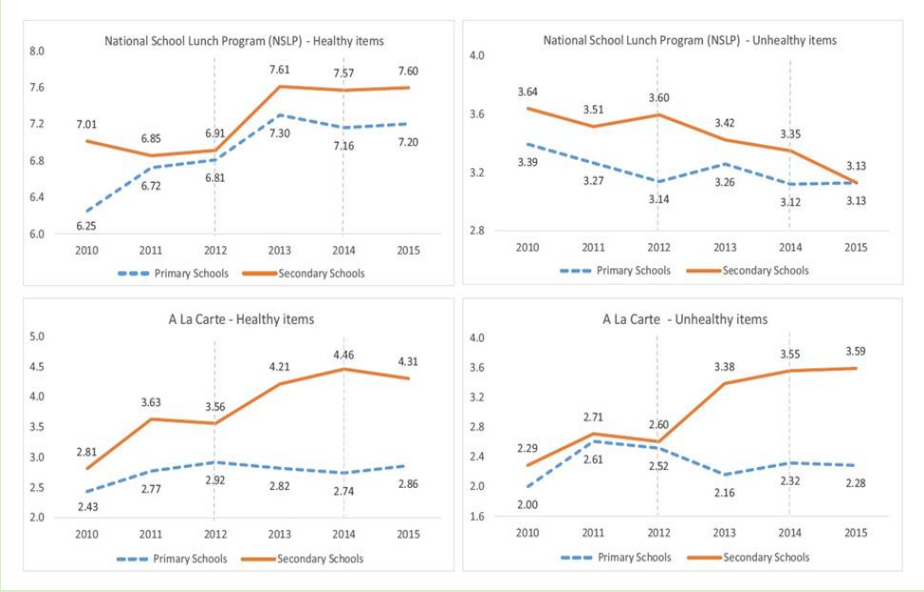
Food and Physical Activity Environments in Schools

- Between 2010 and 2016, significant increases were observed in healthy NSLP options, a la carte offerings, and vending machine items. The largest single-year increase in healthy NSLP options occurred in 2012-13, coinciding with implementation of HHFKA.[3] Such changes can affect not only students' health behaviors, but also their BMI. Using data for 2015, we found that every additional healthy item offered in the NSLP was associated with a 0.07-unit decrease in BMI z-score.[4]

HHFKA led to healthier school meals, and healthy school meals were associated with healthier weight status among children.

- Between 2010 and 2016, schools offered significantly fewer unhealthy items in school lunches. During this same period, the number of unhealthy a la carte offerings increased in secondary schools.[3]
- In 2015-16, following implementation of the Smart Snacks guidelines in 2014-15, the number of healthy items offered in vending machines exceeded the number of unhealthy items for the first time in secondary schools.[3] Each additional unhealthy item offered in vending machines in elementary schools was associated with a 0.04-unit higher BMI z-score.[4]

Smart Snacks guidelines led to fewer unhealthy items in vending machines. These unhealthy items were associated with poor BMI outcomes.



Average Number of Healthy and Unhealthy Food Items Offered in Various School Food Venues from 2010 - 2015

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- Increases in physical activity opportunities at school were associated with healthier weight status among students in cross-sectional analyses. Attending a school with an additional indoor physical activity facility (e.g. gymnasium, indoor pool), outdoor physical activity facility (e.g., playground, walking/running track), or physical activity opportunity (e.g. intramural and extramural sports, recess) was associated with a small but significant decrease in BMI z-score of 0.09, 0.05 and 0.04 units, respectively.[4] However, school physical activity environments remained largely unchanged between 2010 and 2016.[3]

Overall, having greater access to physical activity opportunities in schools was associated with lower BMI Z-scores among students.

Key Findings:

Food and Physical Activity Environments Around Schools

- Among children who actively commuted to school (i.e. walked, biked, or skateboarded), each tenth of a mile increase in distance traveled between home and school was associated with 7% lower odds of being overweight or obese. Further, students who traveled greater than a ½ mile were 65% less likely to be overweight or obese compared to students who did not actively commute to school.[5]

Active commuting to school was associated with healthier weight status, especially at distances greater than a half mile.

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- More than half (54%) of the children surveyed in the NJCHS actively commuted to school on a regular basis compared to the national average of 12.7%. Older students and those living closer to school were more likely to walk, bicycle, or skateboard to school, as were those from families with incomes below 200% of the federal poverty level. Higher maternal education and access to a vehicle were associated with lower rates of active commuting to school.[5,6]

- Among Latino populations, children of foreign-born parents were significantly more likely to walk or bike to school than were peers with US-born parents. Children of foreign-born parents were also more likely to use sidewalks, parks and physical activity facilities.[7]

- Children whose parents perceived their neighborhood to be unpleasant for physical activity had a significantly lower likelihood of walking or biking to school. Aesthetic considerations (e.g., presence of graffiti, abandoned buildings, shade trees) appeared to outweigh parental concerns about crime, traffic, or the condition of sidewalks.[6]

A pleasant neighborhood environment may be critical in parents' decisions about their children's commute to school.

- Far fewer schools had small grocery stores (30%) or supermarkets (15%) within a 0.25-mile radius compared to convenience stores (78%) and limited-service restaurants (73%). The presence of either a small grocery store or supermarket was associated with significantly lower student BMI z-scores. Having a supermarket within 0.25 mile of schools was associated with a significantly lower probability of students being overweight or obese.[8]

Improving access to healthier food outlets around schools may result in healthier weight outcomes in children.

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Policy Implications

Findings from the NJCHS highlight the potential of schools in promoting healthy behaviors and healthy weight among students and suggest actionable steps that schools and communities can take to improve the health and well-being of school age children.

National policies, such as the HHFKA and the Smart Snacks initiative, have been successful in improving the food environment in schools.

Despite initial resistance observed in some social media channels, children in our study cities continue to participate in the school lunch program at higher rates than the national average. Furthermore, participation in programs such as the SBP grew notably after the implementation of the HHFKA.

In our cross-sectional analysis, healthier food environments were associated with healthier weight outcomes among students. Future policies and initiatives in schools should seek to build upon these successes by promoting a variety of healthy foods in all school settings.

Schools are advised to communicate regularly with parents and children to inform them of improvements in school meals, because parental perceptions of the healthfulness of school meals is associated with their children's participation.

Communities might focus on policies and incentives for encouraging stores that sell a larger variety of healthy options, including fresh fruits and vegetables, to locate closer to schools.

Though physical activity environments have not received the same level of policy and programmatic attention as healthy food access, our research suggests that offering more physical activity opportunities in schools can have a positive impact on children's weight status.

Further, active commuting to school is an effective way to engage in physical activity and improve weight outcomes. We find that improving the pleasantness of physical environments in communities may increase the likelihood that children will walk or bike to school.

Schools can promote healthy weight status by initiating programs and policies that encourage children living within walkable and bikeable distances to engage in these active forms of commuting to school.

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Background

The NJCHS is a longitudinal study examining the relationship between food and physical activity environments and children's weight outcomes. Started in 2009, this research has been following a cohort of children and schools in four New Jersey cities: Camden, New Brunswick, Newark, and Trenton.

Data on key food and physical activity behaviors, family demographics, and child health and weight status are collected from over 2,200 families with children. Data are also collected from all public schools in the four study cities, including nurse-measured heights and weights, and details on school food and physical activity policies and practices.

This information is supplemented with the annual collection of data on changes to the food and physical activity environments in the surrounding communities, including opening and closing of stores and outlets, and changes to existing facilities, such as upgrades to convenience stores, parks, sidewalks, and trails.

These multi-level, multi-year data are then analyzed by a large team of experts at Arizona State University and Rutgers University to answer a variety of research and policy relevant questions.

Prepared by Clinton Stevens, Punam Ohri-Vachaspati, Michael Yedidia, and the NJCHS Team

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The NJCHS research team is committed to sharing key findings from the study with community stakeholders. Prior and future briefs in the series can be found at:

www.asufoodpolicy.org

and

www.cshp.rutgers.edu/content/childhood-obesity

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