The In-Person Advanced Cooking Education 4-H After-School Club at Low-Income, Urban Middle Schools: A Pilot Study
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Objective: Adolescents from racial/ethnic minoritized and low-income, urban backgrounds have a high prevalence of poor diet and obesity, yet few interventions exist for this population. Our objective was to conduct a pilot study of the in-person Advanced Cooking Education (ACE) 4-H After School Club intervention at low-income serving, urban middle schools.

Description: A quasi-experimental pilot study was conducted with seventh and eighth grade students at two middle schools in Brooklyn, NY that receive Title I funding (proxy for low-income serving). Participants completed measures at four timepoints (TP): TP1 (October 2022), TP2 (January 2023), TP3 (May 2023), TP4 (November 2023). The ACE intervention was implemented between TP2 and TP3. For ACE, each week (12 weeks total) participants engaged in two sessions: 1) a wellness/professional development session after school (two hours; mindfulness, food and nutrition career exploration, nutrition education), and 2) self-guided at home culinary session (one hour; prepared a plant-based ethnic dish using provided groceries).

Evaluation: Participants completed three 24-hour diet records, which were used to calculate Healthy Eating Index (HEI) scores (range 0-100). Additional measures included demographics, anthropometrics, dermal carotenoid levels (range 0-800), and survey measures such as cooking skills (range 14-70), attitudes (range six-36), self-efficacy (range six-36). Higher scores indicated more optimal scores for all scales. At TP1, participants (n = 23) were on average 11.9 years, and primarily female (61%), Black (96%), and had overweight/obesity (70%). Mean total HEI scores were 42.6 at TP1 and 43.4 at TP2 (P = 0.67). Mean dermal carotenoid levels were 185.9 at TP1 and 209.3 at TP2 (P = 0.22). Mean cooking skills scores were 58.6 at TP1 and 56.5 at TP2 (P = 0.46). Mean cooking attitudes scores were 25.0 at TP1 and 24.1 at TP2 (P = 0.56). Mean cooking self-efficacy scores were 22.9 at TP1 and 22.1 at TP2 (P = 0.71). Post intervention findings (TP3) are forthcoming.

Conclusions and Implications: If proven efficacious, the ACE 4-H After School Club could improve diet behaviors and increase 4-H programming options for adolescents in urban settings.

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Transition to Freshly-Prepared School Meals: Impacts on Meal Appeal, Student Participation, Intake, Food and Packaging Waste and School Finances
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Background: School meals offer an unparalleled opportunity to improve student food security and nutrition outcomes and minimize food and packaging waste to optimize both human and environmental health. However, there is limited information documenting student responses and costs to school foodservice operations when schools transition from serving pre-packaged foods to freshly prepared foods.

Objectives: To document how students react to the transition to 40% freshly prepared meals served with reusable serviceware (trays, cutlery, and bulk napkins and condiments); to understand how the transition can support efforts to reduce food and packaging waste and improve school meal participation; and to examine financial sustainability.

Study Design, Settings, and Participants: Quasi-experimental difference-in-difference design will be employed, and data will be collected at 20 (10 intervention and 10 comparison) Alameda County public elementary schools before and after the transition. Comparison schools were identified by matching on total school enrollment, percent of students eligible for free or reduced-price meals, student race/ethnicity, and highest grade level.

Outcome Measures and Analysis: We will objectively assess student lunch participation, plate waste, food packaging waste, and foodservice costs. We will examine students’ perceptions and knowledge about meals and waste, dietary intake, and food insecurity via student surveys and parent perceptions via focus groups. Quantitative data will be analyzed using regression models with a group-by-time interaction term and a fixed effect for school (to account for the influence of both observable and non-observable time-invariant school-level factors). Models will adjust for potential school-level (total school enrollment, FRPM eligibility, and student race/ethnic composition) and student-level (grade, sex, and race/ethnicity) confounders. We will employ a thematic analysis approach to code qualitative data.

Results and Conclusion: Results and conclusions are forthcoming as data collection will be conducted in Spring 2023 through Fall of 2024. The study has the potential to inform efforts by school districts nationwide looking to optimize the health of students and the environment as well as the sustainability of school foodservice.

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