P161 Food, Health & Choices: Curriculum and Wellness Program Associated With Improvements in State Test Scores

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Objective: It has not been well investigated whether good nutrition through nutrition education helps improve standardized test scores in school-aged children, especially low-income, minority students. This study examines of a nutrition education intervention impacts state test scores.

Design, Setting and Participants: The study used a pre-post, intervention-control design to compare test scores in a sample of New York City 5th-graders. Students in the five intervention schools received Food Health & Choices (FHC) curriculum (as replacement to the recommended 5th-grade science curriculum) and wellness program. FHC is based on social cognitive and self-determination theories. The five matched control schools were selected from the NYC Department of Education's (DOE) "peer schools" which have similar student population, taking into account the schools' location, economic need, race, language, and portion of students with special needs. Peer schools are expected to score similarly on state tests.

Outcome Measures and Analysis: School-level Math and English test scores were publically available on the DOE database. To examine changes from pre (4th-grade) to post (5th-grade), scores were normalized to account for across state drops in scores, due to test restructuring to meet Common Core Standards. Independent T-tests examined differences in the normalized change scores between intervention and control schools.

Results: The intervention and control groups' z-scores for Math (0.8 vs. -0.64) and English (0.2 vs. -0.43) were significantly different ($p < 0.05$), with schools receiving FHC scoring higher.

Conclusions and Implications: These findings are promising, indicating nutrition education interventions could positively impact standardized test scores. Further research is warranted.

Funding: None.

P162 What School Lunchrooms are More Innovative? School-Related Factors Influencing Adoption of Smarter Lunchroom Approach

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Objective: Smarter Lunchroom (SL) program is designed to encourage selecting and eating healthier choices at school cafeterias based on principals of behavioral economics and psychology. The purpose of this study is to

determine school-related characteristics that influence the adoption of the SL approach.

Design, Setting and Participants: Data on school-wise adoption were collected in 2014 using a survey sent out to all schools in the U.S. 8200 school nutritionists across the U.S. responded to the survey.

Outcome Measures and Analysis: Key data variables were program awareness, training, type, and adoption. Adoption differences across schools were analyzed using an ANOVA.

Results: Results indicate that schools that are located in urban and suburban areas are more likely to adopt compared to schools located in towns and rural areas of the country. The results also indicate that schools with less than 25% of students that qualify for free and reduced meals have the highest rates of adoptions of different SL proposed changes.

Conclusions and Implications: The findings indicate that in order to improve the well-being of students, efforts should be concentrated on schools that are located in rural areas and are comparably poor. Based on these characteristics the efforts can be explicitly tailored to make the adoption process more efficient.

Funding: Cornell Food and Brand Lab.

P163 Who's Adopting Smarter Lunchroom Approach? Individual Characteristics of Innovative Food Service Directors

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Objective: Smarter Lunchroom (SL) program was designed to encourage selecting and eating healthier choices at school cafeterias based on principals of behavioral economics and psychology. The purpose of this study was to determine individual-specific factors that influence the adoption of SL approach. The study profiled the individual-specific characteristics of food service directors (FSD) who adapts the new program.

Design, Setting and Participants: Data of 8200 FSD across the U.S. on school-wise adoption were collected in 2014 using a survey sent out to all U.S. schools.

Outcome Measures and Analysis: Key data variables were program awareness, training, type, and adoption. Adoption differences across schools were analyzed using an ANOVA.

Results: There are significant differences between the program awareness ($F(4, 6501)=61.22, p=0.000$), having a training ($F(4, 6501)=45.27, p=0.000$), made any change ($F(4, 1397)=2.85, p=0.023$), the number of SL proposed changes made (the adoption) ($F(4, 6501)=9.44, p=0.000$) and FSD's memberships to professional organizations.

Conclusions and Implications: The findings show that being a member to any nutritional organization such as state's School Nutrition Association (SNA), the National SNA, the Academy of Nutrition and Dietetics increases

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the awareness and adoption of SL approach, regardless of schools' grade level, location, and size. Therefore, reaching out to different nutritional organizations at state and federal levels by providing them with necessary information and training will help to promote new and innovative approaches aimed to improve the well-being of students.

Funding: Cornell Food and Brand Lab.

P164 Did Prior Participation in Food Dudes Help Kids Eat More Fruits and Vegetables Under the New NSLP Standards?

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Objective: The objective of this study was to assess FV intake of children before and after the new standards for school meals were implemented (fall 2012) in schools that were participating in a school-wide intervention designed to increase FV intake.

Design, Setting and Participants: Participants were 928 children in grades 1-5 at two elementary schools that participated in a FV intervention study (Food Dudes) in 2011-2012; one school served as a control. FV intake was assessed on three consecutive days in fall of 2011 (prior to the intervention program and new NSLP standards) and in fall of 2012 and spring of 2013 (after the intervention program and implementation of new NSLP standards).

Outcome Measures and Analysis: FV intake was assessed using digital observation of FV selected and discarded at lunch.

Results: The average amount of FV consumed per day during fall of 2011 was 0.35 cups (SD 0.31). Average FV consumption decreased from fall 2011 to fall 2012 in the control school, yet increased in the intervention school ($p < 0.001$). From fall 2012 to spring 2013, consumption continued to increase in the intervention school and remained stable in the control school ($p < 0.001$).

Conclusions and Implications: Children's response to the new nutrition standards was more favorable among children who had previously received an intervention that increased the variety and amount of FV that children were consuming at school. Additional measures may be needed to encourage children to consume the amount and variety of FV now being served as part of school meals meeting SNLP reimbursement standards.

Funding: USDA.

P165 FITGAME: A School-Wide Game-Based Fruit and Vegetable Intervention

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Objective: To assess the efficacy and feasibility of a low cost school-based intervention targeting fruit and vegetable consumption requiring minimal time from teachers and staff.

Design, Setting and Participants: This pilot study was conducted at one elementary school where 278 children, grades K-5, were introduced to our cafeteria based FitGame. The FitGame consists of a series of comic-book style posters describing the adventures of four sci-fi heroes (the Fits). The storyline is influenced by children's fruit and vegetable consumption. Throughout the game, the heroes encounter a series of challenges which require the assistance of the children in the cafeteria to overcome. Children advance in the game and assist the Fits when they meet school-wide fruit and vegetable consumption goals.

Outcome Measures and Analysis: School-level plate-waste assessments of fruit and vegetable consumption and waste, measured during 15 days of baseline and 22 days of intervention. Fruit and vegetable goals were determined by taking the 60th percentile of the previous ten days' consumption levels. Goals increase as children meet previous goals and consumption increases.

Results: Average fruit and vegetable consumption during baseline was 66 grams and 15 grams, respectively. During the FitGame intervention fruit consumption increased by 32% ($P < .001$) and vegetable consumption increased by 173% ($P < .0001$).

Conclusions and Implications: A low cost non-technical lunchtime game played in the cafeteria requiring little teacher time resulted in significant increases in school-wide consumption of fruits and vegetables without increasing waste.

Funding: Utah Agriculture Experiment Station.

P166 Culinary Creations: A Community-Based Support for Policy Change in the Elementary School Nutrition Environment

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Objective: The purpose of this study was to evaluate the effectiveness of Culinary Creations (CC), an initiative intended to improve the elementary school nutrition environment and youth body mass index (BMI) through policy and environment changes.

Design, Setting and Participants: A quasi-experimental study was conducted in all elementary schools ($n=51$) in the largest school district in South Carolina during the 2012 school year. The sample included all eligible 3rd-5th graders ($n=12,446$) from the 29 participating schools (11 initiated CC in 2011 and 18 initiated CC in 2012) and the 22 non-participating schools. Non-participating schools will implement CC in 2013. CC improved availability of fresh, nutritionally dense meals prepared by trained cafeteria staff. Secondly, CC encouraged schools to implement policies affecting competitive foods, classroom incentives and fundraising.

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