O36 (continued)

Objective: Examine the association between cafeteria noise and selected environmental factors and FV consumption among elementary school students.

Study Design, Setting, Participants: This cross-sectional study was conducted at 20 public elementary schools from 8 states in the U.S. (65% urban; 77% free/reduced price eligible) participating in the National School Lunch Program. Lunch-tray photo observations of 2nd and 3rd grade students lunch trays (n=2,571) was conducted.

Outcome Measures and Analysis: Digital photography was used to assess FV consumption on two consecutive days at each school and photos were visually analyzed (83% inter-rater agreement). Cafeteria noise continuous average exposure was measured via sound level meter (SP-DL-2-1/3; Quest Diagnostics, Oconomowoc, WI). Environmental factors (recess before lunch, time for lunch, presence of a salad bar, and number of FV items offered) were assessed using an observational checklist. Multilevel linear models examined the association between FV consumption (square-root transformed) and all environmental factors, controlling for school-level covariates.

Results: Mean (SD) FV consumption was 0.45 (0.40) cup-equivalents. Mean school cafeteria noise was 79.7 DbA (range=70.1-83.1) and the mean time for lunch was 27.9 minutes (range=20.5-38.5); 27% of students had recess before lunch and 60% had access to a salad bar, with a mean of 7.4 FV items offered (range=3-14). FV consumption was negatively associated with noise ($B=-0.017$; $SE=0.004$; $P<0.001$) and positively associated with recess before lunch ($B=0.096$; $SE=0.023$; $P<0.001$). Time for lunch and presence of a salad bar were not associated with FV consumption.

Conclusions and Implications: Environmental factors, including the cafeteria noise level and recess before lunch, are modestly associated with FV consumption at school lunch and should be considered in future research.

Funding: FoodCorps, Inc.

O37 Factors Associated with Food Insecurity in Rural Central Appalachia

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Objective: The impoverished rural counties of Central Appalachia have low rates of household food insecurity. Food costs are higher in this region when compared to nearby non-Appalachian counties. The purpose of our cross-sectional study was to explore factors associated with food insecurity and fruit/vegetable consumption in rural Central Appalachia.

Study Design, Setting, Participants: Participants (n = 123) enrolled in a 12-month nutrition education/cooking

skills intervention completed a demographics questionnaire, BLOCK Fruit/Vegetable Screener and USDA Household Food Security Survey Module at baseline of the intervention.

Outcome Measures and Analysis: Bivariate associations among all covariates (i.e., age, gender, education, household income) and dependent variables (i.e., food insecurity and fruit/vegetable consumption) were analyzed using Spearman's rank correlation and two-sample t-test. Multivariable associations of food security with other study variables were assessed using linear regression.

Results: In the bivariate analysis, age was positively associated with baseline fruit/vegetable consumption ($\rho = .20$, $p = 0.01$) and negatively associated with food security ($\rho = -0.31$, $p = 0.0004$). Household income was negatively associated with food security ($\rho = -0.30$, $p = 0.0006$) and fruit/vegetable consumption was negatively associated with food security ($r = -0.21$, $p = 0.001$). In the multiple regression, controlling for age, gender, income and education, greater food insecurity was predictive of lower fruit/vegetable consumption.

Conclusions and Implications: High rates of food insecurity influence fruit and vegetable consumption in Appalachia and should be considered during development of nutrition interventions targeting individuals living in this region. Additional research is needed to determine nutrition policies most effective in reducing this barrier to healthy dietary habits in Appalachia.

Funding: NIH

O38 Nutrition Environment Food Pantry Assessment Tool (NEFPAT): Development and Evaluation

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Objective: This study develops and evaluates an assessment tool for the nutrition environment and implementation of recommended practices in food pantries with diverse settings.

Study Design and Setting: The Nutrition Environment Food Pantry Assessment Tool (NEFPAT) was developed as an observational assessment tool that measures six objectives (increasing client choice, "nudging" healthful foods, diversifying fruit/vegetable forms, diversifying fruit/vegetable types, promoting additional resources, and accommodating alternate eating patterns) within the food pantry environment. The NEFPAT was administered in

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O38 (continued)

food pantries across seven Illinois rural and urban counties.

Outcome Measures and Analysis: The initial draft of the NEFPAT was pilot-tested by four trained professionals at nine food pantries. After modifications, five food pantry experts evaluated each section and the overall NEFPAT on content validity using a standardized scale of 1-4 (1='Not Relevant' to 4='Extremely Relevant'). Two teams of two professionals each independently assessed three food pantries to determine inter-rater reliability.

Results: Pilot-tests indicated the NEFPAT was positively appraised, requiring 20-30 minutes for completion, and testers recommended technical modifications. The NEFPAT's six objectives and the overall tool were rated as content valid by all experts, with an average section rating of 3.85 ± 0.10 . Intra-class correlation coefficients for inter-rater reliability ranged from 0.91-0.95 across the two teams of professionals.

Conclusions and Implications: The NEFPAT is a content valid instrument with high inter-rater reliability that can be used to quickly assess the nutrition environment in diverse food pantries. The NEFPAT provides quantitative baseline data for field staff, allowing them to strategically choose effective interventions to improve the food pantry environment.

Funding: USDA

O39 Association Between Food Insecurity and Nutritional Status of Indiana Food Pantry Users

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Background: Food pantries may be used by the low-resource populations to aid maintenance of food security and dietary intake. Yet, the nutritional status of this group is not well characterized.

Objective: The purpose of this study was to evaluate the association between food insecurity, Healthy Eating Index (HEI) total and component scores, nutrients and food group intake of adult Indiana pantry users (21-80 y, n = 285).

Study Design: Participants (≥ 21 y) were recruited from food pantries in eight rural and low income counties in Indiana and interviewed for characteristics, food security (US Household Food Security Survey Module), and dietary intake (Automated Self-Administered 24 Hour Recall, National Cancer Institute, Rockville, MD).

Results: Results from adjusted multiple linear regression models showed that food security was not associated with HEI total score ($P = 0.94$); however, food-secure adults had an estimated 262.9 mg higher Potassium ($P = 0.04$), 0.3 mg higher Riboflavin ($P = 0.002$), and 1.3 μg higher vitamin D ($P = 0.01$) intake, compared with food-insecure adults. Results from non-parametric analyses showed a higher HEI component score for greens and beans in food-secure adults than food-insecure adults ($P = 0.02$).

The average intake of fiber, Calcium, Magnesium, Folate, vitamin A, vitamin E, and vitamin D did not meet the Estimated Average Requirement.

Conclusions and Implications: The significant association between food insecurity and lower intake of Potassium, Riboflavin, and vitamin D along with dietary gaps for many other nutrients suggest that food pantries have potential to improve the nutritional status of these vulnerable groups through access to foods, nutrition education and other interventions.

Funding: NIFA

O40 Pantry Use Predicts Food Security Among Rural, Midwestern Emergency Food Pantry Users

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Objective: Food pantries provide food at no cost and with minimal restrictions and requirements; thus, pantry clients represent a highly food insecure subgroup of the population that receive sufficient resources from formal food assistance programs. The relationship between pantry use and food security (FS) is unclear; increased pantry use may indicate more severe food insecurity or serve as a cushion to prevent food insecurity. We hypothesized that pantry use is associated with FS status among pantry users.

Study Design, Setting, Participants: Participants (n=424) were recruited at a single time point from September-November 2014 from a multistate sample of 24 Midwestern, rural food pantries.

Outcome Measures and Analysis: Participants completed a characteristics survey that included the 18-item U.S. Household Food Security Survey Module. Multiple linear regression models with adult FS score as the outcome variable and the number of pantries visited and frequency of pantry visits as the main predictor variables, adjusted for confounders, determined associations between pantry use and FS scores.

Results: Visiting one food pantry in the last 12 months was associated with a lower FS score ($\beta = -0.8$ $p < 0.01$), indicating better FS, compared with visiting more than one pantry. Employment status, age and income were also associated with FS score. Frequency of pantry visits was not associated with FS.

Conclusions and Implications: Visiting one compared to multiple pantries may be associated with improved FS among rural, Midwestern pantry users. To minimize the need for visiting multiple pantries, future interventions

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