P196 Farm to Summer Meal Program: Building Healthier School and Day Care Environments in Alaska

David Robinson, BS, david.robinson@alaska.gov, Alaska Department of Natural Resources, 1800 Glenn Highway, Palmer, AK 99645; Josephine Dawson, MS, SNS, Alaska Department of Education and Early Development

Objective: To increase acceptance of fruits, vegetables, and local seafood, to raise awareness of the importance of a healthy diet, and to increase student participation in making healthier foods available.

Theory, Prior Research, Rationale: A 2010 Women, Infants, and Children study found 41% of two to four year olds in Alaska were overweight or obese. Feeding America determined the food insecurity rate of children in Alaska to be 20.4%. A 2009 study published in Health Promotion Practice showed students who participated in garden-based learning significantly increased preference for school grown vegetables and increased willingness to try and consume locally grown food.

Description: The target audience was Alaskan children and youth enrolled at eligible sites during the 2016 and 2017 summers. Healthier environments are developed by engaging children with interactive nutrition education specific to their local food system, including growing, harvesting, and/or procuring, supported by mini-grants, VISTA service, technical assistance, and professional evaluation.

Evaluation: Evaluation efforts build off pre/post surveys conducted in the previous grant cycle. Questions were taken from validated questionnaires within the National Farm to School Network Evaluation Toolkit.

Conclusions and Implications: From the sixteen mini-grant recipients whom successfully completed the program, \$19,000 was funded, 772 children were directly impacted, 815 children were indirectly impacted, approximately 785 pounds of fresh produce was grown, about 945 pounds of fresh produce was purchased locally or at stores for taste-testing activities and for recipe development, and all sites reported either “meeting” or “exceeding” project goals. Most site contact in 2016 was remote, which will be compared to a more hands-on approach planned for the 2017 cycle.

Funding: USDA Team Nutrition

P197 Food Insecurity is Associated with Higher than Normal Serum Copper Status

Francis Tayie, PhD, MPH, MS, BS, ftayie@semo.edu, Southeast Missouri State University, One University Plaza, 114 Scully Building, MS 5750, Cape Girardeau, MO 63701; Ariel Dumars, BS, Southeast Missouri State University

Objective: Serum copper concentration was assessed to ascertain associations with adult food security status.

Study Design: Food insecurity alters food habit for food sources that can be detrimental to health,

including risk of copper toxicity. A main concern of copper toxicity is decreased detoxification function of the liver. The phlebotomy sample from the United States National Health and Nutrition Examination Survey (NHANES) 2011 2014 was analyzed for this study. The NHANES applies multistage probability cluster sampling design to collect cross-sectional data from the non-institutionalized United States population. A total of 3,904 participants who had serum copper and adult food security information were included in this study.

Analysis: Participants were put in three food security categories: food secure, marginal food security, and food insecure. Participants were deemed to be at risk of copper toxicity if they had serum copper level above the upper limit of the normal range, 140.12 $\mu\text{g/dl}$. Multivariate regression models were used to study associations with food security status while controlling for age, BMI, ethnicity, and education level.

Results: Overall, 18.3% of the participants had above normal serum copper level. Greater proportions of the marginal food security ($p=0.02$), and food insecure (<0.001) adults had serum copper levels higher than normal. Marginal food security (OR: 1.55, $p=0.01$), and food insecurity (OR: 1.41, $p=0.04$) associated with risk of copper toxicity.

Conclusion and Implications: Food insecurity associates with risk of copper toxicity. Nutrition education should include copper sources and how to avoid excess copper intake.

Funding: None

P198 Greening the Thrifty Food Plan - How Adding a Sustainability Constraint Effects Price, Availability and Composition

Laura Brown, MS, lbbrown@syr.edu, Syracuse University, 150 Crouse Drive, Syracuse, NY 13244; Jennifer Wilkins, PhD, RD, Syracuse University

Objective: The USDA Thrifty Food Plan (TFP) specifies types and amounts of foods for a minimal cost, nutritionally adequate diet and provides the basis for maximum Supplemental Nutrition Assistance Program benefits. The TFP meets several constraints, including: cost, energy, nutrient and MyPlate recommendations. The objective was to assess cost impact on the TFP of a sustainability constraint.

Study Design, Setting, Participants: Using existing sustainable dietary guidelines and organic certification and seasonality as proxies, we developed food lists reflecting the TFP. Food stores representing a range of retail for formats were selected: supercenters, full-service supermarkets, independent grocers, and discount grocery stores. Food price data were collected and recorded at three time points in five different retail food stores in one metropolitan low-income area of Central New York State (CNY).

Continued on page S102

P198 (continued)

Outcome Measures and Analysis: Food price differences were determined between standard TFP and sustainability adjusted TFP. Additional price comparisons were made with local, seasonal produce options available at a regional market.

Results: Organic options generated an average price premium of 47% and availability of 33%. Local, seasonal produce options had an average adjusted price discount of 7% based on average yearly availability. The premium/discount will be applied to the TFP. Effects these adjustments have on price and composition in relation to the TFP and reported consumption will be described. Initial adjustments of consumption resulted in 10% TFP monthly cost increase.

Conclusions and Implications: These preliminary results suggest that the net effect of sustainable constraints is a premium TFP monthly cost, and organic option availability and variety may be limited in stores.

Funding: None

P199 Incorporation of a Food Insecurity Garden into an Experiential Learning Community Nutrition Course

Karen Lowry Gordon, PhD, RD, klowry@kent.edu, Kent State University, 1225 Theatre Drive, Kent, OH 44242; Natalie Caine-Bish, PhD, RD, Kent State University; Jamie Matthews, MS, RD

Objective: To provide undergraduate nutrition students enrolled in a community nutrition course, a structured service learning experience that combined community service with student learning objectives and reflections. Students experienced the development of an on-campus garden, maintenance, harvest and distribution of the produce.

Theory, Prior Research, Rationale: Undergraduate dietetics students are expected to develop discipline-specific skills but often do not have the opportunity to put course knowledge into practice. Community gardens are increasing in popularity and it is essential that future community dietitians understand what is involved in implementing a garden, maintaining it and then harvesting as well as preparing the produce if they are going to be encouraging their clients to garden.

Description: The senior-level Community Nutrition course met for 15 weeks and included 100 minutes each of lecture and lab weekly. The course fulfilled the university's Experiential Learning Requirement (ELR) by requiring each student to complete a minimum of 20 hours of service learning activities which included working in the garden and/or processing the produce for utilization in the nutrition program's food security backpack program.

Evaluation: The garden produced 157.5 pounds of food (106 pounds of tomatoes, 48 pounds of potatoes and 3.5 pounds of kale and lettuce). Students also canned 16 jars of applesauce from local apples and 92 cans of tomato sauce from the tomatoes. Qualitative data was collected from the students via guided reflections.

Conclusions and Implications: The implementation of an on-campus food insecurity garden was viewed as a valuable learning experience by students and also contributed to reducing food insecurity in the community.

Funding: None

P200 Looking Beyond the Target Audience: Examining Motivations for and Impacts of Volunteering with Food for the Summer

Jessica Soldavini, MPH, LDN, RD, Jessica.m.sold@gmail.com, University of North Carolina at Chapel Hill, 2224 McGavran-Greenberg Hall, Chapel Hill, NC 27599

Objective: To determine the motivations for and impacts of volunteering on individuals and families who volunteered with Food for the Summer, an initiative to expand the Summer Food Service Program in Chapel Hill and Carrboro, North Carolina.

Study Design, Setting, Participants: Volunteer opportunities that allowed individuals to bring children and family members, such as delivering and serving meals, were made available to the community through an online sign-up form. Over the summer, 525 individuals signed up and volunteered with the program. An online survey was sent to volunteers at the end of the summer, with 132 responding. Respondents were predominately local school system parents (50%), retired individuals (20%), and local school system employees (16%).

Outcome Measures and Analysis: Responses to two open-ended questions related to motivations for volunteering (n=105) and the impact volunteering had on the respondent and his or her family (n=81) were coded using an inductive approach.

Results: Key motivations for volunteering included the issues the program addressed, a desire to serve the community, and the ability to volunteer with their children. Key themes regarding impacts of the program on respondents and their families included increased awareness of issues such as food insecurity and poverty in their community, and interacting and building relationships with other volunteers and the children and families served through the program.

Conclusions and Implications: Individuals and families volunteering with Food for the Summer benefited from their experiences. Programs addressing food insecurity and nutrition should consider looking not only at outcomes related to their intended target audience, but also at how the program impacts the volunteers and providers involved.

Funding: None