P105 (continued)

Conclusions and Implications: The 12 curricula found had minimal research supporting impact. Overall, studies showed positive effects on outcomes such as blood pressure, BMI, and nutrition knowledge (n=9). Although practical issues may often preclude research, demonstrating effectiveness requires consistent outcomes research.

Funding: University of Illinois Extension

P106 Parental Perception of Child Weight Status Before Age 2 is Associated With Preschoolers Diet

Salma Musaad, MD, PhD, smusaad@illinois.edu, University of Illinois at Urbana-Champaign, 2031 Doris Kelley Christopher Hall, 904 W. Nevada Street, MC-081, Urbana, IL 61801; S. M. Donovan, PhD, RD; B. H. Fiese, PhD

Objective: Nearly a quarter of 2-5 year-olds in the U.S. are overweight or obese. Early intervention is key to preventing childhood obesity. However, parents must accurately perceive their child's weight status in order to be receptive to preventive messages. Herein, the association of parental perception of child weight in the first 24 months with current child body mass index (BMI) and diet at 39.0±8.2 months-of-age was assessed.

Study Design, Setting, Participants, and Intervention: Families of 497 children ages 2-5 years from the Synergistic Theory and Research on Obesity and Nutrition Group (STRONG) Kids cross-sectional cohort.

Outcome, Measures and Analysis: Parents completed the Child Feeding Questionnaire (CFQ) and Comprehensive Feeding Practices Questionnaire (CFPQ) items. Child dietary intake in past 7 days was estimated using items from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) interview protocol. Child BMI percentiles were calculated using measured height and weight.

Results: The majority (79.8%) of currently overweight (OW) children were perceived as non-overweight (NO) by parents in the first 24 months ($P<0.001$). Children perceived to be NO consumed more fatty/sugary foods and milk than those perceived to be OW ($P<0.03$); differences persisted irrespective of BMI percentile. Higher child fruits/vegetables intake was associated with child-centered parental feeding practices (e.g., modeling; involvement) and more monitoring; higher child fatty/sugary foods intake was associated with controlling parental feeding practices (e.g., pressure to eat; emotion regulation) and less monitoring ($P<0.05$).

Conclusions and Implications: Parental perception of child weight in the first 24 months does not reflect subsequent child BMI, and may lead to less healthy diets by affecting parental feeding practices.

Funding: Illinois Council for Agriculture Research, the University of Illinois Health and Wellness Initiative, United States Department of Agriculture (Hatch 793-328)

P107 Development of a Food and Nutrition Curriculum Framework for Cross-Curriculum Use in Australian Schools

Margaret Miller, APD, RN, MPH, m.miller@ecu.edu.au, Edith Cowan University, 2 Bradford Street, Perth, Western Australia, 6050, Australia; S. Baker, BN; S. Waters, PhD, MHP, BSc; A. Devine, PhD, BEd

Objective: This project aimed to develop a K-10 Food and Nutrition Curriculum Framework to integrate teaching of food, nutrition and healthy eating in a range of learning areas in the new Australian Curriculum.

Study Design, Setting, Participants, and Intervention: A literature review was undertaken to inform development of a draft scope and sequence of key content. This drew on existing international food and nutrition curriculum frameworks, theories of development of children's learning and eating habits; and Australian Dietary Guidelines. A two-round Delphi process and a stakeholder workshop were conducted with 29 Australian nutrition education experts to refine and validate the draft for local context.

Outcome, Measures and Analysis: Outcome measures were consensus on developmental stages, food and nutrition themes, messages and content descriptions. Consensus meant over 80% of experts rated items as 'critically important' or 'very important' to develop age-appropriate awareness, knowledge, understanding, application and critical analysis as children move from kindergarten to year 10.

Results: Four food and drink themes (source, choice, experience and health) and five developmental stages based on 2-year school year levels were defined and used to scaffold content. Two to four food and nutrition content descriptions and 1-2 key messages for each theme at each developmental stage were agreed along with examples of how these can be applied in different learning areas.

Conclusions and Implications: Results show how food and nutrition content can be scaffolded to build nutrition literacy as children progress through schooling. This framework can guide development of teaching materials that integrate food and nutrition content whilst addressing general capabilities and achievement standards in various curriculum learning areas.

Funding: Department of Health Western Australia under the National Partnership Agreement on Preventive Health

P108 Knowledge and Behavior Change in Children Within the University of Missouri Extension Family Nutrition Program

Linda Morgan, MA, EdD, morganlj@missouri.edu, University of Missouri Extension, 1317 West Business Hwy 60, Suite 3, Dexter, MO 63841

Objective: To discover any differences in nutrition and physical activity knowledge and behaviors within children who participate in MU Extension's Family Nutrition Program versus children not participating.

Continued on page S150

P108 (continued)

Study Design, Setting, Participants, and Intervention: The researcher used a quantitative, quasi-experimental approach with 184 4th grade elementary students in a control group (no nutrition Education) versus an experimental group (received lessons). A pre-survey and post-survey was given to both sets of students that consisted of 51 questions.

Outcome Measures: The data gathered from students participating was measured utilizing the SPSS program through dependent and independent t-tests and chi-square analysis.

Results: Research revealed differences in knowledge and behaviors within children who were participating in Nutrition Programs. Research revealed changes in: food groups, chronic disease risks, eating out, nutrition, and physical activity.

Conclusions/Implications: Conclusions from this research showed that the Nutrition Program is improving knowledge and behaviors in children. Implications include nutrition and physical activity curriculum improvement, additions, and caregiver involvement. Future research might involve: numerous experimental and control schools, retention of curriculum information, and parental education. Provided literature contributions on nutrition education programs ensuring that educators are able to set health policy. This research justifies nutrition education for behavior change that could lower obesity in children, consequently lowering health care costs. Potential to inform local/state/federal legislators about programming that reduces childhood obesity. Replication of statewide research showing long term results.

Funding: None

P109 Barriers to Implementing Nutrition Education in Schools: Perspectives From Key Stakeholders

Kathleen Porter, PhD, RD, kjporter@vt.edu, Virginia Polytechnic Institute and State University, HNFE ISLB, 1981 Kraft Drive, Blacksburg, VA 24061; P. A. Koch, EdD, RD, Teachers College Columbia University; S. Patel, MS; I. R. Contento, PhD

Objective: To describe school community members' and nutrition education program staff's perceived barriers to implementing nutrition education in schools.

Study Design, Setting, Participants, and Intervention: We conducted semi-structured, tailored interviews with key informants from purposefully selected New York City elementary schools with nutrition education programs (n=17) and with staff from these programs (n=6).

Outcome, Measures and Analysis: After transcribing the interviews, we coded for barriers to having nutrition education in schools using a specifically developed code book. We tallied frequencies of barriers mentioned.

Results: Participants reported barriers across five categories: logistics, learning, lack of internal support, nutrition education program design, and physical school environment. Program staff mentioned logistic barriers, i.e., time

and funding, more frequently than school community members (83% to 53%). While school community members mentioned learning barriers less frequently than program staff (47% to 67%), they were more nuanced in their descriptions, describing specific curriculum needs and testing demands. Lack of support from schools were mentioned across all program staff interviews; however, this category was not mentioned in any of the school community member interviews. Also, only school community members reported physical school environment and design of the nutrition education programs as barriers. Overall, program staff mentioned significantly more barriers than did school community members (2.83 versus 1.76, $p=0.002$).

Conclusions and Implications: While there is some common ground, these two stakeholder groups view barriers to implementing nutrition education programs in schools differently. When implementing nutrition education programs in schools, school community members and program staff should clearly communicate so that they are aware of each others' barriers and can work together to overcome them.

Funding: None

P110 Do the New Nutrition Standards Help Students to Consume More Fruits and Vegetables?

Heidi Wengreen, PhD, RD, heidi.wengreen@usu.edu, Utah State University, 8700 Old Main Hill, Logan, UT 84335; S. Aguilar, MS, RD; G. Madden, PhD; B. Jones, MS

Objective: U.S. children do not consume recommended amount of fruits and vegetables (FV). 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).

Study Design, Setting, Participants, and Intervention: Participants were 392 children in grades 1-5 at one elementary school. FV intake was assessed on 3 consecutive days in fall of 2011 and again in fall of 2012.

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 0.38 cups (SD = 0.35). This amount varied by grade, with older children consuming more FV than younger children ($p<0.001$). GLM repeated measures analysis was used to assess differences in total FV consumption by grade over time (fall 2011, fall 2012). Average FV consumption decreased from fall 2011 to fall 2012 ($p=0.025$). A grade by time interaction was identified ($p<0.001$) such that younger children (grades 1-3) consumed more FV in fall 2012 than they did in fall 2011, but older children (grades 4-5) consumed less FV in fall 2012 than they did in fall 2011. This difference was most drastic among 5th grade children who transitioned to 6th grade in 2012 (0.53 cups to 0.26 cups).

Conclusions and Implications: Children's response to the new nutrition standards for school meals may be

Continued on page S151