O18 (continued)

Program Description: EF works with restaurants in Louisiana to offer easily identifiable healthy options on food menus. Healthy options are promoted on and are searchable within a map-based, EF smartphone app.

Evaluation Methods: Pre- and post-program implementation environmental assessments and cross-sectional manager/owner surveys were collected.

Results: In 44 restaurants, an average increase of 4.5 healthy items was observed from pre- to post-EF implementation. All restaurants with no healthy dishes at baseline (n = 9) added healthy offerings. Of 49 surveyed restaurant managers/owners, most had positive beliefs towards offering healthy options (n = 41), positive perceptions of staff knowledge and skills to offer healthy options (n = 29), high levels of support to implement EF (n = 41), and positive perceptions of EF success in their restaurants (n = 41). Most commonly cited barriers to implementation were customer preference (n = 26), ingredient availability (n = 16), staff knowledge (n = 15), and operational challenges (n = 14). Facilitators included: desire to increase healthy food access (n = 36), desire to entice customers seeking healthy options (n = 36), belief that restaurants should offer healthy foods (n = 34), and opportunities to market the restaurant through EF (n = 34).

Conclusions: The availability of healthy food options increased after program implementation, indicating that programs like EF hold promise for improving customer food choices, especially where no healthy options may exist. When recruiting new restaurants, restaurant-based healthy eating programs may focus on the role restaurants can play in promoting health, benefits of offering healthy food, and the idea of social responsibility. Programs like EF may consider more training for restaurant staff for improved staff nutrition knowledge, program buy-in, and program implementation and fidelity.

Funding: Blue Cross Blue Shield Louisiana Foundation.

O19 Measuring the Reliability of a Frequency Method for Assessing Vegetable Intake Using Photos: A Smart Phone Approach

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Background: Traditional dietary assessment tools can present several challenges, including participant and researcher burden, recall bias, cost, and time. A frequency method using mobile photos and descriptions of meals through smartphones can be a promising strategy to address these challenges.

Objective: To measure the interrater reliability of assessing the frequency of vegetable intake using photos and descriptions from smartphones.

Study Design, Setting, Participants: This study used a pre-posttest experimental design. Participants were undergraduate students living in dormitories at a large Midwestern university. Participants (n = 85) were asked to count the number of times they ate red/orange vegetables and set a goal to eat one more time. Participants used their smartphones to upload photos and descriptions of their meals on an online platform for three days. Based on the study's objective, two raters independently coded meals using uploaded photos and descriptions of meals from smartphones. The first rater, who has several months of experience in public health research, was trained in qualitative coding of mobile photos by a senior researcher. The second rater has over three years of experience in coding mobile photos and oversaw the coding process.

Measurable Outcome/Analysis: The primary outcome measure was the interrater reliability in assessing the number of times each of these vegetable subgroups was consumed daily: dark green vegetables, beans and peas, starchy vegetables, and other vegetables. Cohen $\kappa$ was calculated to determine interrater reliability.

Results: A value of $\kappa = 0.956 \ (P < 0.001)$ was obtained, indicating an almost perfect agreement between the two raters who independently coded each mobile photo using the same training protocols.

Conclusions: The trained raters reliably coded the frequency of vegetable consumption using mobile photos. Therefore, a frequency method using mobile photos and descriptions of meals through smartphones is a reliable strategy to assess vegetable consumption by nutrition researchers. This mobile- phone-assisted method can be used in nutrition programs to improve data quality, reduce participant burden, and minimize recall bias.

Funding: Women and Hi-Tech organization.

O20 Food System Models for Promoting Food Security, Diet Quality, and Health Among Low-Income Populations: A Systematic Review

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**O20 (continued)**

**Background:** Food insecurity disproportionately burdens low-income households and has deleterious impacts on diet quality and health. Food system interventions are gaining in political salience, including short value chain (SVC) models of healthy food access that aim to minimize physical and social distance between producers and consumers.

**Objective:** To evaluate, quantitatively, the influence of SVC interventions on food security, diet, and health outcomes, and characterize qualitatively-reported barriers to and facilitators of SVC participation.

**Study Design, Settings, Participants:** A systematic review of English-language, peer-reviewed studies focused on low-income, US-based households. The search was executed across 9 databases in June 2021: Agricola, CABI Abstracts, CINAHL, Embase, Public Affairs Index, PubMed, Scopus, SociNDEX, and Web of Science. All references were imported into Covidence for deduplication, screening (in duplicate) and full-text review, with Excel used for data extraction.

**Measurable Outcome/Analysis:** Studies were included for synthesis if they reported: relationships between SVC intervention participation and quantitative measures of food security, fruit and vegetable intake, total diet quality, or health markers (e.g., anthropometrics, clinical biomarkers), or qualitatively-reported barriers to or facilitators of SVC participation (i.e., uptake) for low-income consumers. Risk of bias was assessed using either the NHLBI Quality Assessment Tools or the Standards for Reporting Qualitative Research.

**Results:** A total of 13,458 articles were identified and screened for potential inclusion. Specifying SVC interventions varied widely and included farmers market programming, community supported agriculture, produce prescriptions, and mobile markets, among other models. Among quantitative studies, food security and fruit and vegetable intake were frequent outcomes, and ones for which findings were generally promising. Measures of total diet quality and health biomarkers, though, were employed less consistently across all modules. On a scale of 1 (most positive) to 4, modules were not difficult to read (1-1.4); interesting (1.7-2.2) and useful (1.8 - 2.2). Only 12 parents spent > 15 minutes on a lesson; “About My Size” was the lesson most frequently visited for > 15 minutes.

**Conclusions:** Reach of an online program based on principles of eating competence to motivated parents was moderate but with positive response. Findings support considering processes and products in designing for dissemination by considering parent needs and assets to inform optimization of their implementation for uptake and impact.

**Funding:** None.

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**O21 The Reach of “About Eating” to Parents of “Fuel for Fun” Youth Informs Future Dissemination Strategies**

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**Background:** About Eating (AE) is an online program addressing healthy lifestyles and food resource skills. In a school-based nutrition and physical activity intervention AE was offered without utilizing dissemination science tenets to parents.

**Objective:** Examine the reach of the AE component for parent participants of Fuel For Fun (FFF) to plan dissemination science strategies in subsequent implementations.

**Study Design, Settings, Participants:** Controlled trial with school-driven randomization of parent interventions in 8 elementary schools in northern Colorado; parents of fourth grade youth in FFF.

**Measurable Outcome/Analysis:** Website tracking of online participation, responses to baseline surveys of food management skills and eating behavior, end-of-lesson critiques for each module; descriptive statistics, group comparisons using independent t-tests, chi-square.

**Results:** Of 421 parents who completed a study survey, 217 (52%) were in schools with access to AE. Of these, 70 (32%) viewed ≥ 1 AE module, 32 (15%) ≥ 2. Of 70 AE visitors, 17 (24%) viewed all 6 modules. Although parents assigned to AE were less likely than those not assigned to AE to be eating competent (48% vs 58%; P = 0.04) and more highly educated (postgraduate 38% vs 22%, P < 0.001), no differences were observed between AE visitors and non-visiters (n = 147). “Enjoying Eating” and “About My Size” were most popular modules with 44 and 38 visits respectively; all modules were represented in the group (n = 38) who visited 1 lesson. End-of-lesson critiques were uniform across all modules. On a scale of 1 (most positive) to 4, modules were not difficult to read (1-1.4); interesting (1.7-2.2) and useful (1.8 - 2.2). Only 12 parents spent > 15 minutes on a lesson; “About My Size” was the lesson most frequently visited for > 15 minutes.

**Conclusions:** Reach of an online program based on principles of eating competence to motivated parents was moderate but with positive response. Findings support considering processes and products in designing for dissemination by considering parent needs and assets to improve reach, effectiveness, adoption and implementation of online program concepts.

**Funding:** NIFA.

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**O22 Determining Stakeholders’ Perceptions and Barriers on Using Digital Nutrition Education Modules in Home Visitation Programs**

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**Background:** Home visitation programs that reach families of young children offer a unique opportunity to pre-