Evaluating Usability of a Digital Nutrition Education Module to Prevent Early Childhood Obesity in Home Visitation Programs

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Background: Home visitation programs offer a unique opportunity to implement a novel digital early childhood obesity prevention program.

Objective: Evaluate usability of a digital infant feeding nutrition education module with key stakeholders (N=21) of a home visiting program in Florida.

Study Design, Setting, Participants: Home visitors (n=11) and enrolled mothers (n=10) of a home visiting program in Florida participated in a one-time, 45-minute qualitative interview via Zoom with a trained researcher using a semi-structured script based on constructs from the Technology Acceptance Model (TAM) and Social Cognitive Theory (SCT). Participants also completed a modified version of the mHealth App Usability Questionnaire (MAUQ).

Measurable Outcome/Analysis: Interviews were audio-recorded, deidentified, transcribed verbatim and coded by two trained researchers using an inductive thematic analysis approach based on TAM and SCT constructs to develop themes. MAUQ subscales were analyzed using descriptive statistics.

Results: Most participants noted that they liked the digital format, and specifically mentioned the visual or interactive components, convenience and accessibility of the information, and general preference for digital information over paper handouts. Home visitors were interested in content related to food allergies and readiness for solid foods, whereas mothers were interested in all of the infant feeding topics. Nonetheless, the majority (90%) reported that they would be very likely to use information in the learning modules as part of home visits. Usability of the module was high across all three MAUQ subscales (mean ratings out of 7±SD: ease of use = 6.88±0.2, interface and satisfaction = 6.90±0.4, usefulness = 6.78±0.1). Limited access to technology by parents, compatibility of the module with various phone types, and necessity of keeping information updated were mentioned by home visitors as limitations that may impact usability.

Conclusion: The results revealed that a digital nutrition education module to prevent early childhood obesity was deemed usable by both staff and parents of a home visiting program. Future research is needed to determine impact on parental feeding behaviors and child health outcomes.

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Evaluation of Virginia SNAP-Ed’s Eating Smart, Being Active Participant Changes in Fruit and Vegetable Consumption by Race

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Objective: To determine if there were disparities in changes in fruit and vegetable consumption by race and perceived affordability and accessibility of healthy foods for Virginia SNAP-Ed participants using the Eating Smart Being Active (ESBA) curriculum.

Use of Theory or Research: Evaluate SNAP-Ed through a nutrition security lens to determine if any disparities in program outcomes exist.

Target Audience: Virginia caregivers of young children with incomes at or below 185% of the federal poverty level.

Program Description: Virginia SNAP-Ed uses an evidence-based curriculum, ESBA, to promote healthy eating and physical activity through nutrition education that utilizes a peer educator model.

Evaluation Methods: This study analyzed pre-existing Virginia SNAP-Ed evaluation data from FY2021 for SNAP-eligible Virginian adults (n=544). A quasi-experimental pre/post design with a standardized self-reported 28-item survey was used. Variables included demographics, fruit and vegetable consumption, and perceptions on healthy food affordability and fruit and vegetable accessibility. Descriptive statistics were used to describe characteristics of Virginia SNAP-Ed ESBA participants. Paired t-tests were used to determine any pre/post differences in fruit and vegetable consumption, perceived affordability of healthy food, and changes in fruit and vegetable consumption by race.
foods and perceived accessibility of fruits and vegetables. Linear regression analysis was conducted to predict changes in fruit and vegetable consumption based on perceived affordability of healthy foods, accessibility of fruits and vegetables and race.

**Results:** Participants across all races (White=361; Black=162; other=21) reported statistically significant (p≤0.001) increases in mean pre/post survey scores for fruit and vegetable consumption. Positive perceived affordability of healthy foods and attitudes on accessibility of fruits and vegetables predicted increased fruit and vegetable consumption (p≤0.05), but there was no difference in fruit (p≤0.31) or vegetable (p≤0.83) consumption by race.

**Conclusion:** The learner-centered curriculum, ESBA, contributes to equitable programmatic outcomes for all SNAP-Ed participants, regardless of race. However, improvements in perceived changes in the affordability and accessibility of healthy foods from pre- to post- ESBA are predictive of changes in fruit and vegetable consumption, highlighting the importance of the food environment in making behavior changes.

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**Examining the Feasibility of the Online Advanced Cooking Education 4-H After School Club at Low-income, Urban Middle Schools**

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**Objective:** To examine the feasibility of implementing the Advanced Cooking Education (ACE) 4-H After School Club online at low-income serving, urban middle schools. The primary outcome of interest is diet quality improvements.

**Use of Theory or Research:** ACE programmatic activities (mindfulness, food and nutrition career exploration, nutrition education, culinary session) were informed by constructs of the Social Cognitive Theory (eg, self-efficacy).

**Target Audience:** A purposeful sample of three middle schools that receive Title I funding (proxy for low-income serving) in Brooklyn, NY were recruited during the 2021-22 academic year. Participants were 7th and 8th grade students.

**Program Description:** Each week (12 weeks total) participants engaged in a: 1) wellness session via Zoom (2 hours; mindfulness, nutrition career exploration, nutrition education), and 2) self-guided culinary session at home (1 hour; prepared a plant-based ethnic dish using provided groceries).

**Evaluation Methods:** Demographic and the following process evaluation measures were collected: reach (% of students recruited, number attended sessions), retention (% of students who completed intervention), dose response (% of activities implemented, length of sessions), fidelity (% of activities implemented as outlined in the curriculum), and program satisfaction (scale 1=very dissatisfied, 5=very satisfied). Descriptive statistics were calculated.

**Results:** Of the ninety-one 7th and 8th grade students enrolled across the three schools, 64% participated in the study (n=58). Participants were on average 12.2 years, 59% were female, and 88% were Black. Retention was 97%, one student stopped attending at week 8 and another at week 9. For the wellness sessions: mean attendance was 9.6/12, lasted on average 114 minutes (range 102-120 minutes), 90% of activities were implemented, and 84% were implemented as outlined in the curriculum. Program satisfaction scores were as follows: overall (4.4/5), mindfulness (4.2/5), nutrition career exploration (4.4/5), nutrition education (4.4/5), and culinary session (4.5/5).

**Conclusion:** Retention and program satisfaction were high, and curriculum changes were made to improve dose response and fidelity for a forthcoming larger scale ACE study at schools across New York City.

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**Experience, Perceptions, and Preferences of the Pilot Fresh Start Produce Rx Program Participants**

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**Objective:** The objective of this study was to examine the experience, perceptions, and preferences of pilot Fresh Start Produce Prescription (FSPRx) Program participants.

**Background:** Produce prescription (PRx) programs promote the consumption of fruits and vegetables by providing vouchers redeemable at a market or retailer and prioritize individuals with a nutrition and/or health risk. PRx programs have demonstrated impact on nutrition and cardiometabolic outcomes, however, fewer have been implemented in the rural South and research examining the experience and perceptions of rural participants in PRx programming are limited.

**Study Design, Settings, Participants:** This pilot study used a pretest-posttest design and included uninsured patients diagnosed with type-2 diabetes who were recruited from safety net clinics in rural Eastern North Carolina. The 20-week pilot FSPRx Program included a PRx with non-starchy vegetables, group educational classes with a focus on improving food literacy, cooking demonstrations/taste testing that aligned with the PRx, and individualized behavioral support via telephone-based health coaching.

**Measurable Outcome/Analysis:** Audio-recorded phone interviews with a sub-sample of program participants (n=14) lasting 25-60 minutes were conducted post-program and transcribed verbatim. Transcripts were analyzed by members of the research team independently (n=4) utilizing a code-book to identify themes and subthemes via deductive content analysis.

**Results:** Themes from participants experience with the program included self-reported nutrition and health improvements (eg, diet quality, acceptance of vegetables, Continued on page S76