Theory-informed Predictors of Fruit and Vegetable Intake among Cost-offset Community Supported Agriculture Enrollees

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ABSTRACT

Background: In Cost-Offset Community Supported Agriculture (CO-CSA), low-income households receive subsidized shares of a local farm’s produce harvest with the aim of improving their access to and consumption of fruits and vegetables (FV). Social Cognitive Theory (SCT) is a commonly leveraged behavior change theory and informed the design of a CO-CSA plus nutrition education intervention trial for low-income households with children. Objective/ Hypothesis: To model the cross-sectional relationships between baseline SCT-aligned variables and FV intake among CO-CSA trial enrollees. We hypothesized that nutrition-related attitudes, beliefs, and self-efficacy as well as perceived FV availability and accessibility would be significant predictors of FV intake. Methods: In Spring 2016 and 2017, adult enrollees (n=305) completed a baseline questionnaire containing study-specific questions and validated scales to measure nutrition-related psychosocial (knowledge, attitudes, beliefs), environmental (FV availability and accessibility), behavioral (self-efficacy) factors, and self-reported FV intake (National Cancer Institute’s All-Day FV Screener). An objective proxy measure FV intake, dental caries score, was also assessed via resonance magnetic spectroscopy. Descriptive statistics and multiple regression models were conducted in SPSS models controlled for demographic characteristics. Results: Self-efficacy to prepare and eat FV (β=0.27, p<0.001) and in-home FV availability (β=0.13, p<0.04) were significant predictors of daily FV intake (β=0.20, p<0.001), accurate knowledge of FV recommendations (β=0.15, p<0.008), and perceived geographic access to FV (β=0.11, p<0.046) were significant predictors of carotene scores (R²=0.22, p<0.001). Conclusions: Among a set of SCT-informed variables expected to influence FV intake, knowledge of FV recommendations, geographic access to FV, in-home availability of FV, and self-efficacy to prepare and eat FV were significant predictors. However, these only explained 22.23% of outcome variability among a sample of CO-CSA adult enrollees. SCT alone may not be the most appropriate theory through which to understand potential levers of FV intake among adults participating in CO-CSA programs.

METHODS

RESULTS

CONCLUSIONS

Table 3. Relationships between CO-CSA Enrollees’ Nutrition-Related Psychosocial, Environmental, and Behavioral Factors

Table 4. Stepwise Linear Regression Models

Among a set of SCT-informed variables expected to influence FV intake, knowledge of FV recommendations, geographic access to FV, in-home availability of FV, and self-efficacy to prepare and eat FV were significant predictors of dermal carotenoid score. These variables only explained 22.23% of outcome variability among our sample of CO-CSA adult enrollees.

Discrepancies in predictors between measures of FV intake reveal a need for further research on the relationships between psychosocial, environmental, and behavioral factors and FV intake as measured by dermal carotenoid score. Individuals self-selecting into CO-CSA interventions may already have desirable psychosocial and behavioral characteristics. Such characteristics are not necessarily key drivers, or levers, of FV intake. SCT alone may not be the most appropriate theory through which to understand potential levers of FV intake among adults participating in CO-CSA programs.

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We aimed to model the cross-sectional relationships between Social Cognitive Theory-aligned variables and measures of fruit and vegetable intake among enrollees in a Cost-Offset Community Supported Agriculture intervention. Rationale: This analysis will facilitate understanding of forthcoming trial outcomes (e.g., the degree to which behavioral levers of interest were already related to study outcomes before the CO-CSA intervention) and the utility of SCT for predicting FV intake among a subset of low-income consumers.

Hypothesis: Nutrition-related attitudes, beliefs, and self-efficacy and perceived FV availability and accessibility will be significant predictors of FV intake.

RESEARCH OBJECTIVE & HYPOTHESES

Table 1. Variables and Measures Used to Assess Psychosocial, Environmental, and Behavioral Factors among CO-CSA Enrollees

Table 2. Relationships between CO-CSA Enrollees’ Nutrition-Related Psychosocial, Environmental, and Behavioral Factors

Table 4. Stepwise Linear Regression Models