

Feasibility of Using a Community-Supported Agriculture Program to Increase Access to and Intake of Vegetables among Federally Qualified Health Center Patients

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ABSTRACT

Objective: This study explored the feasibility of using a 23-week subsidized community-supported agriculture program to increase access to and intake of vegetables among Federally Qualified Health Center patients.

Methods: Outcomes were measured using pre-post intervention surveys (n = 9). Process data were collected in post-intervention surveys and focus groups (n = 15).

Results: Most participants (77%) indicated that the program improved their health and all (100%) reported that they were eating a greater variety of vegetables because of their participation in the program. Three themes emerged from the focus groups: increased access to fresh and/or organic vegetables, improved diet quality, and the importance of social support during the program.

Conclusions and Implications: Linking subsidized community-supported agriculture programs with Federally Qualified Health Centers has the potential to increase access to and intake of vegetables among low-income patients. However, further research is needed with a larger sample size and a more robust study design.

Key Words: community, community-supported agriculture, diet, health behavior, *Supplemental Nutrition Assistance Program*, fruit, vegetable (*J Nutr Educ Behav.* 2018;50:289–296.)

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INTRODUCTION

Diets rich in fruits and vegetables are associated with decreased risk of many chronic diseases, including heart disease,¹ stroke,² and diabetes.³ Although the Dietary Guidelines for Americans⁴ recommended that most adults consume 2–3 cups of vegetables and 1.5–2 cups of fruit per day, <9%

of adults in the US eat enough vegetables to meet this recommendation and only 13.1% eat the recommended amount of fruit each day.⁵ Low-income populations are particularly at risk for low fruit and vegetable intake,⁶ in part because of poor access to grocery stores that stock high-quality fresh produce.^{7,9}

In recent years, interest in community-supported agriculture

(CSA) programs has grown as a model for increasing intake of fruits and vegetables.^{10,20} Community-supported agriculture is a farm-direct model in which members purchase a subscription for a share of fresh produce from a local farm. Members support the farmer by committing to purchase from the farm for the entire harvest season, by paying up front or signing a contract, and sharing in the inherent risks of farming (eg, weather, pests). Some CSA farms reduce income barriers to participation by offering payment plans and accepting *Supplemental Nutrition Assistance Program* (SNAP) (formerly Food Stamp Program) assistance.^{13,17}

Although interest in CSA as a public health strategy is growing,²⁰ only a few studies have focused on the experiences of low-income participants.^{13,17,21} In 1 randomized, controlled feasibility study, low-income women and children participated in *Farm Fresh Healthy Living*, a CSA program in North Carolina in which members were

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provided with a weekly box of fruits and vegetables at no cost for 16 weeks and were offered educational activities such as cooking classes and a farm tour.¹³ Results from this study suggested that the CSA program had a positive effect on participants, including increasing the variety of produce found in the home. In a second study, Hoffman et al¹⁷ reported that families enrolled in *Head Start* who participated in a CSA program in which they received weekly subsidized vegetable shares and bilingual educational messages at their *Head Start* site, were enthusiastic about the program and indicated that it made a positive difference in their family's eating behaviors.

The purpose of the current pilot study was to explore the feasibility of implementing a subsidized CSA program at a Federally Qualified Health Center to increase access to and intake of vegetables among low-income patients. Federally Qualified Health Centers provide comprehensive primary care services for medically underserved populations and qualify for enhanced reimbursement from Medicare and Medicaid. This pilot study was designed to describe patient experiences with the CSA program and to identify potential benefits to participation.

METHODS

The CSA program was a partnership between Zenger Farm and the Multnomah County Health Department Mid County Health Center, a Federally Qualified Health Center located in Portland, OR. Zenger Farm is a nonprofit urban farm with a mission to promote sustainable food systems and healthy food access for historically underserved populations. The distance between Mid County Health Center and Zenger Farm is approximately 2 miles. English- and Spanish-speaking patients ($n = 25$) were invited by a community health worker employed by Mid County Health Center to become members of the CSA program operated by Zenger Farm. The number of patients invited to participate in the CSA program was determined by the number of available farm shares. Once share capacity was reached, patients interested in par-

ticipating in the program were placed on a waitlist.

This sequential mixed-methods²² pilot study used surveys and focus groups. All CSA members ($n = 25$) were invited to complete the pre-intervention survey during the first pickup in June, 2015. Of these members, 100% completed the pre-intervention survey. During the intervention period, 12 members dropped out of the CSA program; 8 of these memberships were filled with waitlisted patients at various points during the program. Four memberships became available too late into the program (ie, <1 month until the final pickup) to justify spending the time needed to recruit and orient new members to the CSA program. During the last pickup in November 2015, 21 CSA members were invited to complete the post-intervention survey and participate in an English- or Spanish-language focus group. Of those members, 17 completed the post-survey, including 9 from the original cohort, and 15 participated in a focus group. Surveys were self- or interviewer-administered, depending on the preference of the patient. Survey participants did not receive compensation for completing surveys. Focus group participants received a \$20 grocery store gift card. Survey and focus group participants provided written informed consent to take part in this study. All study procedures were approved by the Portland State University Institutional Review Board.

Intervention Overview

The CSA members picked up their weekly share of vegetables from Zenger Farm in the Mid County Health Center parking lot on Tuesdays from 4:00 PM to 6:30 PM for 23 weeks beginning in June 2015. Membership in the CSA, valued at \$20/share/wk, was offered to health center patients on a sliding scale based on income. Nearly all members paid \$5/wk using cash or SNAP benefits; 1 member paid \$9/wk. The remainder of the cost was subsidized by a grant from *Knight Cancer Community Partnership Program*, which supports the development of projects that address community-identified cancer needs. Vegetables were displayed in bulk bins and members

packed their own shares based on posted quantities (eg, 1 head of cabbage, 1 bunch of carrots). The pickup was staffed by a bilingual community health worker and bilingual farm staff member who engaged members in informal education about the vegetables and called or texted participants to remind them to pick up their shares. In addition to vegetables, members received a weekly newsletter containing a list and photographs of vegetables in the share, information about the lesser-known vegetables, recipes, and stories from the farm. Six times during the season, members received laminated skill sheets with written and pictorial instructions for basic cooking skills such as roasting vegetables, cooking greens on the stove, and storing fresh produce. The newsletters and skill sheets were available in English and Spanish. Throughout the season during pickup, farm staff members offered tastings of lesser-known vegetables such as kohlrabi and fennel. The CSA members were also offered an off-site cooking workshop and a tour of Zenger Farm.

Data Collection and Analysis

Four potential outcomes were measured in the pre-post intervention surveys: perceived vegetable consumption, self-reported vegetable intake, self-efficacy to eat fruits and vegetables, and attitudes toward cooking and food preparation. To measure perceived vegetable consumption, respondents were asked whether they ate as many fresh vegetables as they thought they should. Response options included yes, no, and don't know. To measure self-reported vegetable intake, respondents were asked to report how many cups of vegetables (including fresh, frozen, and canned, but not including french fries, fried potatoes, or potato chips) they ate per day, and were provided with a description and examples of what counted as 1 cup of vegetables (eg, size of a baseball, 2 medium carrots). Response options included 0 cups, one half cup or less, one half cup to 1 cup, 1–2 cups, 2–3 cups, 3–4 cups, ≥4 cups, and don't know. For the purpose of this study, responses of 0 cups through 1–2 cups were considered to be <2 cups and responses of ≥2–3 cups were considered to be ≥2

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