

LA Sprouts: A Garden-Based Nutrition Intervention Pilot Program Influences Motivation and Preferences for Fruits and Vegetables in Latino Youth

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ABSTRACT

Garden-based approaches to nutrition education may be effective for improving nutrition habits in adolescents. A quasi-experimental, garden-based intervention for Latino youth (LA Sprouts) was piloted and assessed for its influence on behavior associated with dietary intake and psychosocial factors. Study participants were 104 predominantly Latino fourth and fifth grade students in Los Angeles (mean age, 9.8 ± 0.7 years; $n=70$ control subjects, $n=34$ LA Sprouts participants); more than half ($n=61$, 59.8%) were overweight or obese (body mass index ≥ 85 th percentile). LA Sprouts participants received an intervention of weekly 90-minute culturally tailored, interactive classes for 12 consecutive weeks at a community garden during the spring of 2010; control participants received an abbreviated delayed intervention. Questionnaire data were obtained before and after the intervention. Compared with control subjects, LA Sprouts participants had an increased preference for vegetables overall, increased preferences for three target fruits and vegetables, as well as improved perceptions that “vegetables from the garden taste better than vegetables from the store.” In the overweight/obese subgroup ($n=61$), LA Sprouts participants had a 16% greater increase in their preference for vegetables compared with control subjects ($P=0.009$). Results from this pilot study suggest that a cooking, nutrition, and gardening after-school program in a garden-based setting can improve attitudes and preferences for fruits and vegetables in Latino youth, which may lead to improved nutritional habits and dietary intake and reduced health disparities.

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DURING THE LAST 2 DECADES, OBESITY RATES among children in the United States have reached alarming levels,¹ recently prompting the formation of the first-ever federal task force to address this epidemic.² Pediatric obesity is associated with an increased occurrence of childhood cardiovascular disease risk factors, type 2 diabetes mellitus, asthma, and psychological or psychiatric problems,³⁻⁵ and is likely to persist into adulthood.^{6,7}

Substantial racial and ethnic disparities in obesity prevalence exist among US children and adolescents, with prevalence higher among Mexican-American adolescents than in their non-Hispanic white counterparts.¹ In Los Angeles, CA, the prevalence of obesity in children varies markedly by ethnic/racial group, with adolescent Latinos having among the highest rates (27% in 2007).⁸ Low intakes of dietary fiber, specifically fruits and vegetables (FV), coupled with high consumption of refined grains and added sugar⁹⁻¹¹ have previously been shown to be linked to obesity and related disorders in Latino youth age 8 to 18 years in Los Angeles, providing a rationale for targeting specific dietary components in nutrition interventions.

Dietary habits and food preferences are shaped when children are young,¹² and children's tastes for vegetables are strong predictors of vegetable consumption.^{13,14} Studies sug-

gest that having a direct experience with growing food increases children's understanding of food and its relationship to health.^{15,16} Access to fresh FV is a key factor determining FV consumption,¹⁷ and the federal obesity prevention initiative promotes gardening as a means to make healthy foods more affordable and accessible for families.² Programs that involve both gardening and nutrition components are not uncommon, are gaining popularity, and may be effective in increasing preferences for and improving dietary intake of FV in adolescents.^{18,19} However, despite consistent anecdotal evidence, the rigor of evaluations conducted on programs that are intended to impact health behavior and psychosocial factors has varied greatly. Furthermore, few have included large numbers of Latino children.²⁰⁻²⁴ Existing studies are limited, yet suggest a positive influence of combined cooking and gardening programs on preference for FV.^{15,25} Additional research is needed, specifically interventions focusing on high-risk Latino youth populations.

“LA Sprouts” was developed as a 12-week gardening, nutrition, and cooking intervention targeting Latino youth. Secondary aims of the study were to examine the effect of the LA Sprouts intervention on behavior associated with dietary intake and psychosocial factors. The present analysis tests the

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hypothesis that, compared with control subjects, students who received the LA Sprouts pilot intervention had greater improvements in school engagement; perceptions of, preferences for, and motivation to eat FV; and self-efficacy.

METHODS

“LA Sprouts” was piloted in the spring of 2010 to examine its influence on dietary intake, obesity risk, and nutrition-related behavioral and psychosocial parameters in predominately Latino elementary students in Los Angeles. The curriculum for the program was based on social cognitive theory, which major premises include reciprocal relationships between person, environment, and behavior.²⁶ Primary results demonstrate that, compared with control subjects, participants in LA Sprouts had improvements in dietary fiber and vegetable intake, decreased diastolic blood pressure, and a trend for less weight gain among the subsample of overweight/obese participants.²⁷

Participants

A convenience sample of 104 predominantly Latino fourth and fifth grade students (ages 9 to 11 years) at one public elementary school within Los Angeles Unified School District was included in this pilot quasi-experimental intervention study. The school was selected because of its close geographic proximity to a community garden and because 94% of the student body qualified for free or reduced-price school meals (an indicator of economic need). Students offered the LA Sprouts intervention were enrolled in an existing after school care program (n=40). Students who were not enrolled in the after school care program were invited to participate as control subjects (n=77). Control participants did not receive any nutrition, gardening, or cooking information between pre- and post-testing. There were no similar competing nutrition or gardening activities or lessons at the school or the after-school program. The Institutional Review Board of the University of Southern California and the Los Angeles Unified School District approved this study. Informed written consent was obtained from parents and students prior to the study.

Description of the Intervention

LA Sprouts intervention classes were taught during a 90-minute session once a week for 12 weeks at a nearby community garden during late January to April 2010. Sessions began with a 45-minute interactive cooking and nutrition education lesson taught by trained study staff or a graduate student, and held within a central outdoor space at the garden, which was equipped with communal seating, a mobile cooking/grilling island, and tables needed for food preparation and eating. Nutrition lessons were adapted from existing curriculum developed at the University of Southern California and focused on culturally relevant produce (such as cilantro, nopales, beans, corn, and squash), seasonally and locally available fruits and vegetables, whole grains, and low-sugar beverages.²⁷ Led by a teacher, students worked in small teams of five to prepare recipes that emphasized FV. They consumed the snack in a “family-style” manner (ie, together at a table with a tablecloth, nondisposable plates and silverware), given the demonstrated positive effects of such practices on behavioral, biological, and psychological outcomes.²⁸⁻³⁰ Conversation skills

were practiced to promote family meal habits, and children were encouraged to replicate recipes and conversations at home.

After the cooking and nutrition component, students received a 45-minute interactive gardening lesson, which was taught by a bilingual Latina certified master gardener from the University of California Cooperative Extension. Two large raised garden bed plots measuring 6 feet by 12 feet were devoted to the cultivation of FV for LA Sprouts. The gardening curriculum also used a hands-on approach in which children participated directly in planting, growing, maintaining, and harvesting organic fruits and vegetables. Gardening activities included lessons on identifying vegetable plants, seasonal crops, transplanting, recycling, composting, irrigation, and mulching.

A five-to-one student to teacher ratio was maintained during the program. Visits to a local farmers’ market were integrated four times over the 12 weeks; students received a \$1 voucher with which they could buy locally grown FV to take home to their families. After the study was completed, a gardening/nutrition/cooking workshop was offered to all fourth- and fifth-grade students and their parents at the elementary school as an abbreviated delayed intervention for control subjects.

Measurements

Data on behavior associated with dietary intake and psychosocial factors were obtained via a questionnaire completed by participants at the elementary school 1 week before and 1 week after the intervention. The questionnaire was comprised of the following measurements:

Demographics. Participants were asked basic demographic information, including their age and ethnicity. To ascertain family socioeconomic status (SES), questions were included about parents’ education, use of a computer at home, and mother’s ownership of a car. Because almost one fourth of children left responses to parents’ education blank, responses to the latter two questions were used as an indicator of family SES, based on the work of other investigators.³¹

Acculturation. The Acculturation, Habits, and Interests Multicultural Scale for Adolescents (AHIMSA) was used to assess acculturation to the dominant culture.³² The AHIMSA, a brief 8-item scale designed for adolescents in multicultural settings, has been validated in Latino child populations. The AHIMSA generates four subscale scores that each range from 0 to 8: assimilation (United States orientation), separation (other country orientation), integration (both countries orientation), and marginalization (neither country orientation).

Motivation for Healthy Eating. Motivation to eat fruits and vegetables was assessed with an adapted version of the Motivation for Healthy Behavior measure from the Treatment and Self Regulation Questionnaire measure developed^{33,34} and validated³⁵ in a pediatric population. The 17-item measure generates two main subscales: (a) autonomous/intrinsic motivation (nine items, score range 9 to 63); (b) controlled/extrinsic motivation (eight items, score range 8 to 56). Cronbach’s alpha for the intrinsic motivation scale in the pediatric

population was 0.83, and for the extrinsic motivation scale was 0.87.³⁵

School Performance. Engagement in the school classroom was measured using the School Engagement Questionnaire, a validated 15-question instrument³⁶ that asks students to rate items on a 5-point scale. Three subscales are derived, including behavioral, emotional, and cognitive engagement. The scales met and exceeded the desired criterion for reliability, with Cronbach's alphas ranging from 0.79 to 0.92 in a sample of elementary school students from three states.³⁶

Attitudes About, Preferences for, Perceptions, and Self-Efficacy to Eat and Cook FV. A combined measure to assess attitudes about, preferences for, perceptions, and self-efficacy to eat and cook FV was created using or modifying questions that were taken from validated questionnaires developed for pediatric populations.³⁷⁻⁴¹ Nine questions asked about level of enjoyment of commonly eaten fruits (apple, banana, cantaloupe, grape, kiwi, mango, pineapple, pear, watermelon) and 11 about level of enjoyment of commonly eaten vegetables (broccoli, cauliflower, corn, spinach, carrot, eggplant, cactus, lettuce, green pea, tomato, zucchini) on a 5-point scale. Eleven questions assessed self-efficacy to choose, eat, or cook FV on a 5-point scale. Using a 7-point scale, 13 questions assessed attitudes, preferences, and perceptions relating to gardening and cooking FV. Reliability assessments done on the combined measure of 44 questions in 25 predominantly Latino fifth-grade students at the same elementary school in the Los Angeles Unified School District indicated good test-retest reliability (Pearson correlation coefficient [r]=0.96).

Anthropometrics. Anthropometric measures relating to primary hypotheses were the subject of a previous manuscript²⁷ and are provided here for descriptive purposes. Weight (kg) and percentage total body fat (via bioelectrical impedance) were measured with a scale-based Tanita Body Fat Analyzer (model TBF 300). Body mass index (BMI) and Centers for Disease Control and Prevention age- and sex-specific BMI percentiles were determined using EpiInfo (version 3.2, 2005). Students with a BMI at or more than the 85th percentile ($n=61$) were classified as being overweight.⁴² Waist circumference was measured and recorded to the nearest 0.1 cm.

Statistical Analysis Summary scores for individual scales were derived where appropriate. The (a) absolute and (b) percentage change in measures over the two time points were calculated as the (a) difference between follow-up and baseline measures and, (b) that difference divided by the baseline value of the measure. Differences between LA Sprouts and control participants in baseline demographic characteristics were assessed using t tests or χ^2 tests. Mean scores on study measures post-intervention were calculated, adjusting for baseline values of the respective measure, and differences between LA Sprouts and control groups were assessed with an analysis of covariance. General linear equations modeling change in the measures of interest from pre- to post-intervention assessed whether there were differences between the LA Sprouts intervention and control groups accounting for effects of covariates selected a priori, including age (continu-

ous), sex, and baseline value of the measure of interest. Additional adjustment for SES (mother has a car, family computer at home) or acculturation (integration score, continuous) as potentially confounding variables did not result in appreciable differences in our effect estimates, and thus the final model did not include these variables. A Bonferroni correction for multiple testing was applied to analyses, examining the effect of the intervention on dependent variables, including individual fruits and vegetables, attitudes, and perceptions. Change measures were examined by strata of study participants based on subgroups of sex, acculturation (at or below-average integration, above-average integration), overall school engagement (at or below-average, above-average), and BMI (normal [<85 th percentile], overweight/obese [≥ 85 th percentile]). A P value ≤ 0.05 was considered statistically significant. Correlations between behavioral and psychosocial factors and anthropometric measures were examined in post-hoc analyses to explore possible underlying relationships. All statistical analyses were done using the Statistical Analysis Software (version 9.2, 2008 SAS Institute Inc).

RESULTS

Of the 40 students eligible, 37 (93%) agreed to participate in LA Sprouts, and 34 (85%) completed the 12-week intervention, attending at least 10 of the 12 sessions and completing testing. Of the 77 students invited, 70 (90.9%) agreed to participate as control subjects. Compared with control subjects, LA Sprouts participants were more likely to be female (61.8% vs 41.4%, $P=0.05$) and were somewhat more likely to have a computer at home (82.4% vs 66.7%, $P=0.10$) (Table 1). There were no differences in baseline measures of school engagement, motivation to eat or preferences for FV, self-efficacy, or other characteristics between the intervention and control groups prior to the intervention. Overall, mean scores on the AHIMSA were highest on the "integration" subscale (3.8 out of a possible 8, compared with less than 2.7 on the other subscales), indicating that the study population's acculturation pattern combined aspects of the US culture with aspects of their own culture.

After the 12-week program, LA Sprouts participants, compared with control subjects, had improved preferences for vegetables overall (an increase of 1.8 points vs a decrease of 1.3 points, respectively; $P=0.06$) but not fruits (Table 2). Among the overweight and obese subgroup, LA Sprouts participants had a 2.1-point increase in their preference for vegetables overall (+10.9% vs -3.7% compared with overweight/obese control subjects, $P=0.009$). In addition, female LA Sprouts participants had an increase in their preference for vegetables (+3.9% vs -8.7% compared with female control subjects, $P=0.05$). When looking at changes in preferences for individual fruits and vegetables, intervention participants, compared with control subjects, had significantly increased preferences specifically for pears, carrots, and nopal (all at $P<0.05$).

LA Sprouts participants responded with higher values on all individual questions assessing attitudes and perceptions at post-intervention. Compared with control subjects, LA Sprouts participants were 54% more likely to report that "vegetables from the garden taste better than vegetables from the store" ($P<0.05$) (Table 3). LA Sprouts participants also had a greater change in their perceptions that "cooking is easy"

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Table 1. Baseline demographic and physical characteristics of LA Sprouts pilot intervention study participants and control subjects (N=104)

Characteristic	All Study Participants		P value ^a
	LA Sprouts (n=34)	Control subjects (n=70)	
	←————— n (%) —————→		
Sex			
Male	13 (38.2%)	41 (58.6%)	0.05
Female	21 (61.8%)	29 (41.4%)	
Race/ethnicity (n)			
Latino	29 (85.3%)	63 (90%)	0.3
Mixed	5 (14.7%)	5 (7.1%)	
Asian	0	2 (2.9%)	
	←————— mean ± standard deviation —————→		
Age (y)	9.7 ± 0.7	9.9 ± 0.7	0.2
BMI^b	21.2 ± 5.5	21.7 ± 5.0	0.6
BMI percentile	77.3 ± 24.7	81.1 ± 22.4	0.4
Waist (cm)	74.4 ± 13.4	75.5 ± 13.2	0.7
Total body fat (%)	28.2 ± 12.6	29.0 ± 9.8	0.7
	←————— n (%) —————→		
Computer at home, yes	28 (82.4%)	44 (66.7%)	0.10
Mother has own car, yes	22 (64.7%)	36 (54.6%)	0.3
Acculturation scales^c	←————— mean ± standard deviation —————→		
Assimilation	1.0 ± 1.7	0.8 ± 1.4	0.6
Separation	2.4 ± 2.4	2.8 ± 2.3	0.4
Integration	3.8 ± 2.9	3.7 ± 3.2	0.9
Marginalization	0.7 ± 1.5	0.6 ± 1.2	0.7

^aP values were calculated using t tests (for continuous) and χ^2 tests (for categorical variables).

^bBMI=body mass index; calculated as kg/m².

^cAcculturation scales range from 0-8.

($P=0.01$) and “gardening is easy” ($P=0.05$), but these two differences were no longer statistically significant after adjustment for multiple comparisons.

LA Sprouts participants had greater increases in self-efficacy than control subjects from pre- to post-intervention (3.3 vs 0.4 point change, respectively), but these results did not achieve statistical significance. Change in the overall level of school engagement did not differ between LA Sprouts participants and control subjects, or on any of the three engagement subscales.

Post hoc analyses suggested that reductions in weight were correlated with an increased preference for vegetables ($r=-0.30$, $P=0.09$) and fiber from fruit ($r=-0.31$, $P=0.08$) among LA Sprouts participants.

DISCUSSION

Results of this pilot study indicate that a 12-week community garden-based nutrition, cooking, and gardening after-school pilot program may have increased preferences for vegetables overall, as well as for certain target FV, in predominantly Latino fourth- and fifth-grade elementary school students (age 9

to 11 years), in which more than half of the study population were overweight or obese. The intervention also resulted in increases in reported preferences for vegetables among female participants and in participants who were overweight or obese. The intervention shows promise to change perceptions and attitudes about cooking and gardening, eating and preparing fruits, and the superiority of taste of garden-grown vegetables over those bought in the store. This study provides a basis for obesity-prevention practitioners to recommend programs with gardening and cooking/nutrition components, particularly to Latino youth.

Results previously reported from this pilot study showed that the LA Sprouts intervention significantly improved fiber and vegetable intake and decreased diastolic blood pressure and rate of weight gain, especially in the overweight/obese subgroup.²⁷ Taken together, results suggest possible pathways that could be further examined to understand how garden-based cooking and nutrition programs could influence these outcomes, ie, through affecting attitudes, preferences, and motivation for FV. In addition to taste, personal motiva-

Table 2. Change in preferences for fruits and vegetables between pre- and post-intervention overall and by subgroups: LA Sprouts pilot intervention study

Group	Vegetables, Point (%) Change			Fruits, Point (%) Change		
	LA Sprouts	Control subjects	<i>P</i> value ^a	LA Sprouts	Control subjects	<i>P</i> value ^a
All	n=33 1.8 (7.6%)	n=69 −1.3 (1.8%)	0.06	n=33 −0.5 (0.9%)	n=69 −0.3 (0.4%)	0.9
Overweight/obese ^b	n=17 2.1 (10.9%)	n=42 −2.1 (3.7%)	0.009	n=17 −0.06 (0.3%)	n=42 0.17 (0.8%)	0.9
Normal body mass index	n=15 1.3 (4%)	n=26 0.12 (11.5%)	0.9	n=15 −0.9 (2.1%)	n=26 −0.9 (2.1%)	0.9
More acculturated	n=20 1.5 (6.1%)	n=37 −1.5 (2.8%)	0.09	n=20 −0.05 (0.2%)	n=37 −0.73 (1.6%)	0.4
Less acculturated	n=13 2.2 (9.8%)	n=32 −1.0 (7.2%)	0.8	n=13 −1.2 (2.7%)	n=32 0.19 (0.8%)	0.3
Male	n=13 2.5 (13.3%)	n=40 0.3 (9.4%)	0.7	n=13 0.15 (0.9%)	n=40 −0.28 (0.4%)	0.8
Female	n=20 1.3 (3.9%)	n=29 −3.6 (8.7%)	0.05	n=20 −0.9 (2.1%)	n=29 −0.34 (0.6%)	0.5

^a*P* values for differences between LA Sprouts participants and control subjects were calculated using *t* tests.

^bBody mass index \geq 85th percentile.

tion, psychosocial influences, and self-efficacy have been shown to impact FV consumption in studies of obesity in adult and adolescent populations.⁴³⁻⁴⁵ Self-efficacy is also an important tenet of the social cognitive theory²⁶ and has been shown to be an independent contributor to eating behavior.⁴⁶ The current study suggests that the LA Sprouts intervention may have influenced self-efficacy, but these findings were not statistically significant. Due to the small sample size, an examination of whether psychosocial factors mediated the effects of dietary intake on subsequent obesity risk was not possible. However, exploratory post hoc analyses suggested that increased preferences for vegetables and fiber from fruit were correlated with reductions in weight, suggesting a possible underlying relationship. Additional studies that are designed to examine mediating effects are needed. Needless to say, an effect on attitudes, preferences, and motivation can, in and of itself, be considered a positive outcome of the program.

Previous studies that included a gardening component with nutrition education have also demonstrated an effect on FV preferences.^{15,25,47} A 1-year classroom nutrition education program that combined nutrition lessons with gardening activities resulted in greater preferences for, but not willingness to taste, certain vegetables among fourth graders (age 9 to 10) compared with nutrition lessons alone or controls receiving neither nutrition nor gardening lessons.¹⁵ A 3-year observa-

tional study showed that fourth and fifth graders most exposed to a combination of healthy school food, cooking, dining, and garden programs with academic integration increased their preference for FV.²⁵ The current study was able to detect increases in FV preferences in 12 weeks in overweight and obese participants, indicating that shorter-term interventions may also be effective in improving eating behavior, particularly in this subgroup.^{48,49}

Although previous nutrition studies involving a gardening component have included small proportions of Latino children, this study is the first to specifically focus on a high-risk Latino youth population. Latinos are the fastest growing segment of the US population, and by the year 2050, they are projected to comprise nearly one quarter of the population.⁵⁰ A culturally tailored program like the LA Sprouts gardening/nutrition/cooking intervention may be useful for influencing behavior associated with dietary intake and psychosocial factors among Latino youth populations.

Although an effect of the intervention on school engagement was not detected, it is possible that a longer observation time is required to examine changes.⁵¹ Additional measures of school performance, such as grades and study habits, should also be assessed. Alternatively, an intervention of longer duration may be necessary to impact school performance as well as the long-term sustainability of other outcomes.

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Table 3. Change in attitudes and perceptions about eating and preparing fruits and vegetables, gardening, and cooking between pre- and post-intervention: LA Sprouts pilot intervention study

Measure item	LA Sprouts (n=34)			Control Subjects (n=70)		
	Mean±SD ^a		Mean change (%)	Mean±SD ^a		Mean change (%)
	Pre	Post		Pre	Post	
Cooking is fun	6.3±1.6	6.1±2.0	8.7	5.2±2.2	5.2±2.1	16.7
Cooking is easy	4.9±2.1	5.5±2.0	51.0	3.8±2.3	3.8±2.0	22.6
I can cook at my house	5.2±2.2	5.9±1.9	61.7	4.8±2.3	5.0±2.1	40.3
I can prepare a recipe with fruits	5.6±2.0	6.0±1.7	34.7	4.8±2.2	5.1±2.1	28.8
I can prepare a recipe with vegetables	4.1±2.3	4.9±2.4	86.8	3.3±2.3	4.1±2.4	76.4
I can make a salad	4.8±2.5	5.2±2.2	83.4	4.6±2.5	5.1±2.3	65.8
Food that I cook is healthier than food I buy	4.7±2.3	4.9±2.3	32.9	4.7±2.3	4.8±2.0	56.6
Gardening is fun	5.5±2.3	5.9±1.9	43.8	4.6±2.3	4.4±2.3	34.6
Gardening is easy	4.7±2.2	5.5±1.9	63.0	4.1±2.2	4.0±2.2	28.6
I can grow a fruit at my house	5.1±2.2	5.4±2.4	38.4	4.9±2.3	4.7±2.3	34.3
I can grow a vegetable at my house	4.5±2.6	5.1±2.3	89.1	4.5±2.3	4.4±2.5	38.0
Fruit from the garden tastes better than fruit from the store	4.9±2.4	6.2±1.4	85.9	4.8±2.2	4.8±2.2	38.3
Vegetables from the garden taste better than vegetables from the store ^b	4.4±2.5	5.8±1.8	115.9	4.2±2.3	4.3±2.2	50.6

^aSD=standard deviation. On a scale of 1 to 7 (1=not true at all, 7=very true), means and standard deviations were calculated using analysis of covariance, adjusting for age, sex, acculturation, and baseline value of the measure.

^bP value <0.05 for the difference in mean percentage change with Bonferroni correction.

Limitations to this study include the exploratory nature of the pilot intervention; it was not a randomized controlled trial and participants enrolled in an existing after-school program were compared with other students at the same school; although bias in the selection or participation of study subjects cannot be ruled out, baseline characteristics were essentially the same between intervention and control participants. The study in its current form was also limited by the relatively small number of participants. It was designed to detect differences in anthropometric measures related to primary study hypotheses and not the behavioral/psychosocial factors examined here. It did have sufficient power ($\geq 80\%$) to detect differences in preferences for vegetables and fruits overall, but was underpowered for analyses of motivation and engagement factors as well as for subgroup analyses. Response bias is a possibility in this study, in that

participants may have provided what they thought were socially desirable answers to questions. The questionnaire used in the study to assess attitudes, preferences, perceptions, and self-efficacy to eat and cook FV requires more rigorous validation. In addition, the focus on a predominately Latino youth population provides a strength over previous studies, but it may limit the generalizability to other youth populations. Although the LA Sprouts pilot study did incorporate some walking as transportation to and from the garden and gardening is itself is a source of exercise, a formal physical activity component was not included in this intervention. Also, despite efforts to emphasize a parental component, given the recognition of the importance of role-modeling, classes offered to parents of LA Sprouts participants were not well-attended (approximately 25% of the parents participated).

CONCLUSIONS

Results from this LA Sprouts pilot study demonstrate the feasibility of a cooking, nutrition, and gardening after-school program in a garden-based setting, and suggest that such an intervention may be effective in influencing attitudes, perceptions, and preferences for FV. Additional evaluations of interventions that similarly incorporate gardening and nutrition/cooking components are necessary. Registered dietitians and dietetic technicians, registered, should consider implementing programs with a gardening component in combination with cooking/nutrition aspects in future pediatric obesity prevention programs.

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STATEMENT OF POTENTIAL CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

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