

Positive Impacts of a Vegetable Cooking Skills Program among Low-Income Parents and Children

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ABSTRACT

Objective: To evaluate the impact of a vegetable-focused cooking skills and nutrition program on parent and child psychosocial measures, vegetable liking, variety, and home availability.

Design: Baseline and postcourse surveys collected 1-week after the course.

Setting: Low-income communities in Minneapolis–St Paul.

Participants: Parent–child dyads ($n = 89$; one third each Hispanic, African American, and white) with complete pre-post course data; flyer and e-mail recruitment.

Intervention(s): Six 2-hour-weekly sessions including demonstration, food preparation, nutrition education lessons, and a meal.

Main Outcome Measures: Parental cooking confidence and barriers, food preparation/resource management, child self-efficacy and cooking attitudes, vegetable liking, vegetable variety, and vegetable home availability.

Analysis: Pre-post changes analyzed with paired t test or Wilcoxon signed-rank tests. Results were significant at $P < .05$.

Results: Increased parental cooking confidence (4.0 to 4.4/5.0), healthy food preparation (3.6 to 3.9/5.0), child self-efficacy (14.8 to 12.4; lower score = greater self-efficacy), parent liking of vegetables used in the course (7.8 to 8.1/10.0), vegetable variety (30 to 32/37 for parent, 22 to 24/37 for child), and home vegetable availability (16 to 18/35) (all $P < .05$).

Conclusions and Implications: A short-term evaluation of a vegetable-focused cooking and nutrition program for parents and children showed improvements in psychosocial factors, vegetable liking, variety, and home availability.

Key Words: cooking intervention, low-income, parent–child pairs, vegetables, self-efficacy (*J Nutr Educ Behav.* 2017;■■:■■–■■.)

Accepted October 31, 2017.

INTRODUCTION

American diets have shifted toward greater consumption of meals away from home, an increased reliance on convenience foods,¹ and a decline in cooking meals at home.² These trends

may have contributed to the rise in obesity^{3,4} and poor diet quality because meals prepared from scratch at home are higher in nutritional quality and result in greater inclusion of vegetables compared with meals consumed or prepared away

from home.^{5–8} Because overweight and obesity are more prevalent among low-income families,⁹ increasing the frequency of healthy meals prepared at home by those with limited food resources represents an important area of obesity prevention research.

Cooking skills interventions commonly target low-income participants^{10–12} to improve facilitators of home-cooked meals including cooking confidence, nutrition knowledge, liking of vegetables, variety of vegetables eaten, and home availability of vegetables.^{8,13–15} These measures are precursors to improved dietary intake (eg, increased vegetable consumption), a long-term outcome resulting from behavioral change.^{16–19} Several studies involving low-income participants produced positive changes in these precursors. For example, Wrieden et al¹² conducted a 7-week cooking

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Conflict of Interest Disclosure: The authors' conflict of interest disclosures can be found online with this article on www.jneb.org.

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<https://doi.org/10.1016/j.jneb.2017.10.016>

skills intervention study for socioeconomically deprived adults and showed a small but positive effect on improving dietary intake and confidence in food preparation, which could lead to greater dietary change. Jamie Oliver's *Ministry of Food* cooking program was effective in increasing cooking confidence for adults of lower socioeconomic status and producing positive qualitative results for food resource management.²⁰ Improvements in food purchasing behaviors and cooking attitudes were sustained 6 months after the program. A pretest/posttest evaluation of a cooking program in low-socioeconomic Scottish communities showed an increase in 4 aspects of cooking confidence: (1) cooking using basic ingredients, (2) following a recipe, (3) tasting new foods, and (4) preparing and cooking new foods with long-term improvements observed in fruit and vegetable consumption at 1-year follow-up.²¹ Cooking interventions have generally been effective in increasing confidence in food preparation skills, potentially improving dietary quality and other behaviors in the long term.²⁰⁻²³

More recently, cooking interventions recruited parent and child pairs.^{10,11} Familial participation can evoke a positive social experience and promote a sense of connectedness that may lead to increased liking of targeted foods (eg, vegetables), as proposed by the Evaluative Conditioning Theory.²² These programs addressed some parents' desire for increased help from children in meal preparation.²³ A pilot study by Fulkerson et al¹¹ recruited parent-child pairs for an intervention aimed at increasing the healthfulness of foods in the home and at family meals. The families participated in 5 sessions consisting of interactive nutrition education, taste testing, building cooking skills, and hands-on meal preparation. Their intervention increased child cooking self-efficacy and child help with preparing meals. Despite promising findings, parent-child cooking skills studies have been small in scale and limited in number^{10,11}; thus, further investigations with a family-centered approach are warranted.

Cooking Matters is a cooking skills and nutrition program for low-income

families developed by the national nonprofit organization Share Our Strength.²⁴ Grounded in Social Cognitive Theory,²⁵ *Cooking Matters* was shown to improve cooking confidence, improve aspects of food resource management, and decrease healthy cooking barriers in adults.²⁶ For the current study, the *Cooking Matters for Families* curriculum, a version of the program in which parents and children learn to cook together, was modified to focus primarily on procuring, preparing, and serving vegetables to children at mealtime. The modified *Cooking Matters for Families* program was delivered to 2 intervention groups as part of a longitudinal intervention study with outcomes assessed at baseline, immediate after the course, and at 6 and 12 months' follow-up. Parents in intervention group 2 were also asked to incorporate behavioral strategies²⁷ into preparing and serving dinner meals at home. Preliminary analyses showed no between-group differences for outcome measurements (ie, child vegetable intake and associated factors) from baseline to immediate postcourse. Therefore, data from intervention groups 1 and 2 were combined for this report. The purpose of the following study was to evaluate the immediate impact of the vegetable-focused cooking skills program on parent and child psychosocial measures, vegetable liking, variety of vegetables eaten, and home availability of vegetables using data collected at baseline and immediate after the course from combined intervention groups 1 and 2 participants.

METHODS

Participants

The researchers recruited parent-child pairs through flyers and e-mail from 11 sites (3 were Spanish-only) serving low-income families. Sites included subsidized housing, schools, churches, and community centers in the Minneapolis-St Paul metropolitan area. Eligibility criteria were that (1) the participant child was aged 9–12 years; (2) the parent was the household's main food preparer; (3) the family qualified for public assistance; (4) the family had access to a phone; (5) the

family had not participated in *Cooking Matters for Families* in the past 3 years; and (6) the parent read, spoke, and understood English (or Spanish for Spanish-only sites). The University of Minnesota Institutional Review Board approved the study.

Implementation of the Vegetable-Focused Cooking Skills Program

The learning objectives of the 6 original *Cooking Matters for Families* sessions were revised to address procuring vegetables, using various vegetable preparation methods, and incorporating vegetables into meals and dishes (Supplemental Material 1). The 6 2-hour cooking skills and nutrition education sessions had the following format: (1) a professional chef demonstrated a vegetable-focused recipe, (2) parent-child pairs prepared the recipe under the guidance of the chef and nutrition educator, (3) a nutrition educator delivered a nutrition education lesson, and (4) participants ate the meal they prepared together. Chefs and nutrition educators participated in training sessions to ensure consistent delivery of the program. Families were given a bag of groceries that included all of the ingredients needed to prepare the meal at home.

Fifteen weekly courses across 11 different host sites were held between September, 2014 and June, 2016, totaling 90 cooking/nutrition education sessions. A total of 103 parent-child pairs enrolled in the study. Twelve families did not complete immediate postcourse data because they did not attend at least 4 cooking skills/nutrition sessions, and 2 families had missing data and thus were excluded from analysis. Of the remaining 89 families, 11% attended 4 sessions, 36% attended 5 sessions, and 53% attended 6 sessions. Parents and children were given \$40 and \$20 in cash, respectively, after participating in the pre-post data collection sessions.

Evaluation of the Program

Participants completed the same surveys at baseline and immediate after the course to assess changes in

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