

Kids For Cooking!
Community Partners Join Forces To Create An After-School
Cooking Club For Middle-School Children

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Abstract

Three community partners joined forces with a local school food service director to develop and pilot test an after-school cooking class for sixth and seventh graders at a suburban middle school. This article will step through the planning, implementation and evaluation process of this pilot program and share lessons learned and suggestions for future similar low- or no cost-health education programs that can be offered during out-of-school time hours. Results indicated increased fruit and vegetable consumption in students, increased self efficacy, accompanied by parent perceptions of their children being more interested in preparing their own snacks, helping with meal preparation, and grocery shopping, after completing the cooking sessions.

Keywords: childhood obesity, nutrition, weight balance, middle school, after-school

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Cooking Club For Middle-School Children

During the Fall 2013 Semester, an undergraduate Health Program Planning and Evaluation class joined forces with three community leaders to create an afterschool cooking program tailored for 7th graders: a) a food service director for a local suburban public school district; b) a health program director from the county's Public Health Department who was also a zone leader for the statewide nonprofit organization, and c) a public health educator with the state's department of health's Creating Health Communities Program. This planning committee guided the students to create a high-quality after-school program using best practices. Together they created a complete health promotion program containing a program rationale, goals, measurable objectives, budget and an evaluation process entitled, "Kids For Cooking" (KFC). The goal of KFC was to increase self-efficacy towards snack and meal preparation and to increase knowledge about healthy weight balance in 6th and 7th grade students.

In Spring 2014, the planning committee obtained mini-grant funding to pilot the KFC program at one suburban middle school from two partners: Ohio Action for Healthy Kids and the College of Education's Partnership mini-grant program. Because one of the authors is an instructor of Health Education, her spring semester Health Promotion Planning class assisted efforts by creating the evaluation tools, marketing materials, and interacting with students and parents during the program.

The KFC directly aligns with several of the Association for Middle Level Education Standards (AMLE, 2012). Specifically, the program directly reflects the AMLE standards for Teacher Preparation by aligning with three elements in three different standards. As three

stakeholders worked together to produce an outcome that would benefit middle level students, this project is aligned with Standard Three, Element a; Standard Four, Element b; and Standard Five Element c. First, KFC aligned with 3(a) because students' needs and development levels served as guiding principles for the planning and implementation of the project. The project aligned with 4(b) as participating students learned ways to uphold a healthier lifestyle for themselves and their families through an engaging and active learning program. Finally, the project aligned with AMLE Standard 5(c) as the community, schools, students, and families were all incorporated as beneficiaries of the program. Thus, Middle Level Philosophical Foundations, Middle Level Instructional Strategies, and the standard of Working with Family Members and Community Involvement were all addressed, making this a project that supports AMLE Standards. This report will summarize the outcomes of the KFC project. But first, a review of literature will be provided.

Review Of Related Literature

Childhood obesity prevention is a national (US HHS, 2014) and Ohio (Ohio Department of Health, 2013) public health priority. Public health experts agree that the etiology of childhood obesity is multifactorial; in the last two decades Americans have had an increased access to inexpensive high calorie-low nutrient density foods, reduction in lifestyle physical activity, higher poverty levels, more working mothers, and fewer home-made family meals together. It is well known that families who have frequent home-prepared meals together are more likely to eat healthier meals, less likely to eat nutrient-poor foods, have lower risks for obesity, and experience better family relationships (Martin-Biggers et al., 2014). Adding to the societal factors associated with the increase in childhood obesity are several school-related trends which

include the reduction or elimination of active transportation to school, elementary and middle-school recess, K-12 physical and health education, and family-consumer sciences.

One can hardly watch news coverage today without hearing about childhood obesity. So it is no wonder that some American families experience psychological strain regarding the preparation of healthy meals and snacks (Fulkerson, Kubick, Rydell, Boutelle, Gardwick, Story, & Neumark-Sztainer, 2011). In an in-depth qualitative study of eleven middle class mothers who work outside the home (Slater, Sevenhuysen, Edington & O'Neil, 2011), researchers reported that all participants were conflicted and stressed; they felt unable to live up to their expectations of thinking they should consistently provide healthy homemade foods. The authors discovered one main factor that consistently affected child healthy food choice: children who felt independent and had the ability to obtain and prepare their own food ate healthier. The authors concluded that interventions should address male partners and children working together while taking great care not to perpetuate gender stereotypes.

Upon reviewing the research that focuses on out-of-school time cooking and nutrition education, it's obvious that most interventions focus on middle school youth because this is the age where children tend to have the appropriate fine motor skills, literacy, and where parents seem to be most comfortable allowing their children in the kitchen. In a sample of 145 4-8th graders and their parents in Canada (Woodruff & Kirby, 2013), 87% of food planning and preparation was done by the mother or grandma, but over half of parents (51%) said they would like to help more with meal planning and preparation. In addition, children who indicated higher levels of self-efficacy for cooking and had higher family meal attitudes were associated with more frequency of family meals together.

In terms of recommended content for a cooking class for this age group, six groups of food experts (n=51) were interviewed for their suggestions on what to include in cooking interventions with youth (Fordyce-Vorrham, 2011). Their suggestions were as follows: have students work in small groups to practice and repeat skills, involve parents as much as possible, include motivational factors for youth, involve members of school and local communities, and follow federal government guidelines. Specific content should include written or electronic recipes, nutrition books, websites, where to give on-line help, food literacy, reading labels, as hands on ability to plan, shop, prepare and cook a meal. Nearly all of these suggestions were incorporated when developing the KFC program.

Students who eat nutritionally balanced meals retain more information and have less behavioral/attendance issues. Hunger and/or poor nutrition can have long-term effects on cognitive development and school performance. Nutrition and learning are inextricably linked. As previous U.S. Surgeon General, M. Jocelyn Elders, MD, said, *“You can't educate a child who isn't healthy, and you can't keep a child healthy who isn't educated.”*

Program Rationale and Description of School Site

The school selected for the KFC pilot test was a suburban school district located near a metropolitan area that, in recent years, has lost several employers. As a result, this area experienced greater poverty and unemployment than the state average (US Census Bureau, 2012). The school district witnessed an increase in the number of students qualifying for free/reduced lunch; at the time of the study, 42% qualified for free/reduced lunch. This was also considered to be a highly mobile population due to the unemployment rate.

This particular school district is also unique in that it is fortunate to employ a progressive food service director and licensed dietitian who steadily improved the breakfast and lunch

offerings over the past 15 years. In 2010, her efforts earned a prestigious national ["Healthier US School Challenge"](#) award, which recognizes exemplary effort to providing students with healthy food choices, and was the first school district in Ohio to receive this award. The food service director has been extremely active with statewide nonprofit agency, Ohio Action for Healthy Kids, serving on the steering committee and giving several presentations to educate and inspire other school food service directors to initiate healthy changes. For several years, she has made note of her conversations with students about what they eat at home and has developed a desire to extend healthy nutrition education and skills beyond the cafeteria and into the home setting.

Overall, the selection of the school for this project was the result of three factors coming together: a highly engaged and motivated food service director, a Ohio Action for Healthy Kids zone leader willing to apply for state level funding and assist with the project, and an assistant professor of public health education interested in research and service opportunities for students. The school district's food service director recommended one particular school as the location for the KFC Pilot program because this school had the highest percentage of free and reduced school lunch student population in her district.

Methods

Participant Recruitment

Because of limited funding and capacity, the planning committee decided it was necessary to narrow the program invitation to one student grade, so the KFC program was initially advertised only to all 7th graders at the school (total n=334). In a flyer and registration form sent home with all 7th graders, participants were told that the first 25 to return the completed registration, survey and consent forms would be accepted. The program was also

advertised by using the school website, parent e-mail communication, posters in the cafeteria, and daily announcements by the principal. After the registration deadline passed, there were still approximately ten slots open; thus, 6th graders joined the program.

Program Implementation

The food service director and a chef from a local grocery store created the specific content for each session. The goal of the KFC program was to increase self-efficacy towards snack and meal preparation and to increase knowledge about healthy weight balance in 6th and 7th grade students. Thus, the measurable objectives of the KFC program were as follows: a) increase student self-efficacy for cooking skills that lead to preparing healthy snacks and meals at home; b) students will be able to identify at least three strategies for a healthy weight balance; and c) students and parents will devise their own practical and achievable short/long-term goals for improving the nutrient density of family meals and snacks.

During the first session, students were given a three-ring binder with related educational handouts, recipes, and pages for notes. See Table 1 for a summary of session content, activities, handouts and homework.

Table 1

Summary of Session Content and Activities

Session Number & Participants	Lesson Content	Activity/Demo	Handouts/Giveaways	Homework
1: Students	Introductions, group assignments Safety and Sanitation tips Reading a recipe Choosing healthy snacks	Pre-survey Students prepare a recipe, yogurt parfait, healthy snack and beverage guidelines	Recipes; “Get Fresh” recipe book; and knife safety	Create a healthy snack at home, bring in recipe or describe next week
2: Students and Parents	Discussion of snack recipes from homework Reading labels Grocery shopping tips Cooking on a budget Healthy Snacking	Review of actual labels, Parent and child look at grocery ads and plan a healthy dinner for under \$11. Preparation of trail mix.	Recipes – trail mix, quick healthy recipes for crock pots Preparing a meal for \$11. Students who did their homework received a water bottle OSU extension handouts	Grocery store scavenger hunt + \$10 Kroger gift card
3: Students and Parents	Food preparation process, each team makes 2 recipes, so taught different skills.	Dinner prepared by students for parents. Recipes prepared by student teams: Berry Delicious salad, Mexican rice, steamed broccoli, lemon berry trifle, chicken quesadillas	Student post-survey Cooking aide gifts, in OAFHK tote bag “Be Well” book for parents 521-Almost None Placemats from Get Up Montgomery County.	

Students worked in small groups to complete activities. During the second session, to offset the expense of the food preparation “homework” and encourage students to help with

grocery shopping, students were given a \$10 Kroger gift card and a grocery store scavenger hunt worksheet to complete and return the third session. The gift cards were partly funded by the mini-grants, but the grocery store also donated five \$10 gift cards for the program. After the third session, in which students prepared a full dinner for the parents, students were presented with some cooking aides, and encouraged to keep preparing their own healthy snacks and meals at home. The cooking aides consisted of two cutting boards, a 2-cup glass measuring cup, a whisk, measuring spoons, and measuring cups. These items were chosen as a result of parent feedback regarding needed kitchen items on the registration form.

Program Evaluation

Using previously validated questions from published survey tools (Wall, Least, Gromis & Lohse, 2012; Lohse, Cunningham-Sabo, Walters & Stacey, 2011), the Health Instructor guided the class to create a parent pre-post survey, a student pre-post survey, and a session evaluation tool. The planning committee reviewed all survey tools to tailor the instruments to the situation, and slight improvements were made. In addition, some questions from an Ohio State University Expanded Food and Nutrition Education Program (EFNEP) evaluation were included (Ohio State University EFNEP Program, 2012). The KFC student survey was pre-tested with five 7th grade students for ease of completion and time. Table 2 is provided as a summary of the evaluation plan.

Table 2

KFC Evaluation Plan

Tool and Target	Content addressing research questions	Pre-post?	Administration.
Student survey	Behavior (Fruit, vegetable, whole grain and sugar-sweetened beverage consumption), food preparation self-efficacy, energy balance knowledge,	✓	First session, Third session
Parent-completed registration form/parent survey	Student and parent name, contact information including emergency phone number, student allergy, student skills desired, perception of student cooking skills and confidence, family meal frequency, fast food, self cooking skills, cooking utensils owned and desired, permission to attend, informed consent, agreement to attending 2 nd and 3 rd sessions.	✓	Before program started, 3 months after.
Session 2 Evaluation – all participants	Will they try any skills learned at home, favorite part of session, least favorite part of session		Second session
Goal Setting postcards – family unit.	Students together with their parents set short and long-term nutritional goals. These goals were sent back to them 6 weeks later as a reminder. Also reminded them that parent survey is coming soon.		Third session

Parents were mailed the final (post) survey through US Mail, in mid-July 2014. To increase the response rate, those who completed the survey and mailed it back received a \$10 Kroger gift card, and their names were entered in a drawing for one \$50 Target gift card. The study plan was submitted to the researcher's university IRB, and was found to be exempt from approval because it was survey-based only and therefore did not meet the definitions for human subjects research.

Data Analysis and Results

Descriptive frequencies and t-tests were performed using SPSS (SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp). A significance level of $\alpha < 0.05$ was used for all statistical analyses. Values $<.05$ will be considered statistically significant.

A total of 24 students sent in the registration form. Parents were sent a confirmation note home through backpack express that their child was registered in the program with a reminder of the starting date and time. One student cancelled before the first class began. Of the 23 remaining students who registered, ten students attended all three sessions, five attended two sessions, three attended one session only and there were five students who didn't attend any sessions. Of the 18 students who attended at least one session, 12 (67%) were 7th graders, and 6 (33%) were 6th graders.

Student Pre/post Survey

Nineteen students completed a pre or post program survey, and a total of 14 students completed both the pre and post questionnaires, so 14 pre-post scores were used in the analysis. The two main categories of evaluation were student self-efficacy (SE) towards snack and meal preparation, and knowledge (K) about healthy weight balance. Questions related to SE (Q12 – Q16) were coded 1-4, depending on level of confidence the students felt for each question. A total score for SE in each student's pre- and post-test was calculated by tallying the response to five questions. Lower numbers were an indication of lower confidence. The lowest possible score would be a five, and the highest possible score would be a 20.

For the pre-test, the mean score was 16.64 with a standard deviation of 2.790 and median score of 17. The post-test mean score was 18.43 with a standard deviation of 2.344 and median score of 20. The difference between the two test means was nearly two points, and the difference between the medians was three points. Frequency tables for both surveys are shown in Tables 3 and 4.

Table 3

SE Pre-test scores, items 12-16 totaled

Score	Frequency	Percent	Cumulative percent
11	1	7.1	7.1
12	1	7.1	14.3
14	1	7.1	21.4
15	1	7.1	28.6
16	1	7.1	35.7
17	3	21.4	57.1
18	2	14.3	71.4
19	2	14.3	85.7
20	2	14.3	100.0
Total	14	100.0	

Table 4

SE Post-Test Scores, Items 12-16 Totaled

Score	Frequency	Percent	Cumulative percent
12	1	7.1	7.1
16	1	7.1	14.3
17	2	14.3	28.6
18	2	14.3	42.9
20	8	57.1	100.0
Total	14	100.0	

The paired t-test was significant, with $p=0.010$ ($t=3.003$, $df=13$), with the 95% CI=3.070, 0.501. Among the students who took the pre- and post-tests, they felt significantly more confident in their abilities to perform the tasks covered in those questions.

Students were also asked to indicate by checking a box to affirm whether or not a certain behavior/practice was a good way to maintain or keep a healthy weight (Q12). This knowledge-related question (K) was coded by giving the student a score between the lowest and highest possible score (0-7). For the pre-test, the mean score was 6.14 with a 1.292 standard deviation, with the median score of 7. For the post-test, the mean score was 6.86 with a 0.535 standard deviation, and a median score of 7. Obviously, this group of students presented with a higher level of knowledge than the planning group anticipated.

The last category of questions addressed in the student survey was student healthy behaviors (BE) (Q1-4, 9-11). Students were asked to indicate the frequency of how often they consumed a variety of foods and helped with meal preparation. These results are included in Table 5.

Table 5

Student Healthy Behaviors

Pre-post, topic	Mean diff*	St. dev. of difference	95% confidence interval		t	df	p
Item 1, veggie consumption	.500	1.019	1.088	-0.88	1.836	13	.089
Item 2, fruit consumption	1.00	0.877	1.506	0.494	4.266	13	.001**
Item 3, sugar sweetened beverages	.286	1.267	1.017	-0.446	0.844	13	.414
Item 4, help with meal prep	.429	1.453	1.267	-0.410	1.104	13	.290
Item 9, whole grain consumption	.143	1.231	0.854	-0.568	0.434	13	.671
Item 10, pre-packaged snack consumption	-.214	0.975	0.349	-0.777	0.822	13	.426
Item 11, family meal together	.071	.0730	0.439	-0.350	0.366	13	.720

Notes: *The difference was calculated by subtracting the pre-test score from the post-test score. A positive difference means that the post-test score was higher.

**Statistically significant

In Table 5, we can see that Q2 had a strongly significant change from pre- to post-test, with an increase of 1 point on a 5 point scale. Item 1 had a change that was marginally significant, at $p=.089$. From the results of these t-tests, it appears that for this sample of students, there was a significant increase in fruit consumption and a marginally significant increase in vegetable consumption.

Parent Pre/Post Survey

A total of 13 parents answer questions on both the pre- and post-program survey. One parent responded only to the pre-program survey, and those responses were not included in the statistical analysis. Each parent question and the results are shown in Tables 6 and 7.

Table 6

Parent Pre/Post Survey Results By Question

Question	Response Coding	Pre-program	Post-program	t-test results
1. How often does your child prepare or get own healthy snack?	Never (1) Sometimes (2) Often (3) Always (4)	Mean=2.769	Mean=3.231	p=0.053* t=-2.143, df=12
		SD=0.927	SD=.0725	
2. How often does your child assist in meal preparation?	Never (1) Sometimes (2) Often (3) Always (4)	Mean=2.077	Mean=2.846	p=0.005** t=-3.333 df=12
		SD=0.760	SD=0.689	
3. How often does your child help with grocery shopping?	Never (1) Sometimes (2) Often (3) Always (4)	Mean=2.538	Mean=3.077	p=0.012** t=-2.940 df=12
		SD=1.127	SD=0.954	
5. How often would you say you eat a family meal (breakfast, lunch or dinner) together?	Never (1) Sometimes (2) Often (3) Always (4)	Mean=2.923	Mean=3.231	p=0.104 t=-1.759 df=12
		SD=0.862	SD=0.599	
6. How often do you eat a meal (breakfast, lunch, dinner) at a fast food restaurant, on average, per week?	0 times/week 1 time/week 2 times/week 3 times/week 4 times/week 5+ times week	Mean=2.000	Mean=2.231	p=0.387 t=0.387
		SD=0.707	SD=0.439	

Notes: *Marginally statistically significant; **Statistically significant

Table 7

Chi Square Test Results, Parent Survey, Question

Question	Response Coding	Pre-program	Post-program	Chi-square results
4. How confident would you say your child is with preparing their own snack?	Not confident at all (1) Somewhat confident (2) Very confident (3)	0 7 6	0 2 11	p=0.-9 12 df

Three questions showed a significant difference between pre- and post-tests; frequency of child preparing healthy snack, frequency of child assisting with meal preparation, and frequency of child helping with grocery shopping.

When asked to indicate their child's improvement in his/her eating or snack/meal preparation habits after the KFC classes, parent responses were split between two of the responses from a list: Six parents (46%) said their child takes more interest in preparing his/her own snacks, and 7 (54%) said their child is taking more interest in preparing family meals. Lastly, parents indicated that the cooking aide gifts given to the students at the last class were used sometimes-1 to 2 times per week (38%), often-3 to 5 times a week, (38%), and always-every day (23%).

Session 2 Participant Evaluation

Because time for covering content was extremely tight during all three sessions and students were asked to complete a pre/post survey during the first and third sessions, participants

completed a session evaluation during the second session only. A total of 27 evaluation forms were completed. Generally the hands-on activity of making trail mix was their favorite part of the lesson, along with nutrition labeling reading practice, and cooking on a budget. A summary of participant responses can be viewed in Table 8.

Table 8

Session 2 Participant Evaluation Summary

<p>Of all you learned today, is there anything you plan to try at home? If yes, please explain:</p>	<ul style="list-style-type: none"> • Unit pricing • Meal planning • Making the trail mix by combining foods we typically have in our pantry • Because I want to be healthier! • I will make the trail mix at home (listed 10 times) • Eating more healthy things • Reading labels (listed 3 times) • Sale price • Watching calories and sugar • Cooking on a budget and Planning a meal under \$11.00 (listed 3 times)
<p>What was the most interesting and your favorite part of this class?</p>	<ul style="list-style-type: none"> • 1 tsp sugar – 4 grams • Visual reference was very interesting • The most interesting thing for me was equating the actual amount of sugar noted on product labels to real teaspoons of pure sugar. Startling results! Learning about the amount of sugar I’m putting in my body. Sugar is just so so good. I both love/hate that I learned the facts about it. • The amount of sugar in our food. • Making the trail mix (listed 17 times) • Getting to make the trail mix, and the Izzes • Enjoyed it all • Eating the trail mix • Every part of today’s lesson, loved the hands on learning • Counting calories and the labels • All of it • The ways to substitute fatty foods and snacks and eat healthier • Hands on learning and the gift card! ☺ • Gift card • Everything • How much one serving is (listed twice) • Explanation of fats and food labels. • Learning the serving size of cereal • Planning a dinner menu
<p>What was your least favorite part of today’s class?</p>	<ul style="list-style-type: none"> • Simple and had very few items for pricing • Would be a good idea to let the kids know what too much sugar leads to. Thanks for the class, great job! • Having to stop • Nothing, it was very enjoyable • Price amount said for 4 people • The end

Notes: KFC Session 2 (April 21), 27 evaluations completed, parents and students combined

Goal-setting activity

At the end of the third session, parents and students were asked to write short-term and long-term goals on a self-addressed postcard and were told that they would receive the postcard back at a later date. Short-term goals were defined as goals to be set and met in the coming weeks while long-term goals would be set and potentially met in the coming months. See Table 9 for a listing of responses written on the postcards, which were mailed through U.S. postal service to participants in mid-June; they also served as a reminder of the impending follow-up session.

Table 9

Participants’ Goals, Devised by Student and Parent During Third Session

Short term (in next couple weeks)	Long term (in next couple months)
<ul style="list-style-type: none"> • Drink more water (4 responses) • Serve more fruit • Eat healthier food • Introduce more whole wheat pasta • Help in kitchen • Eat more veggies and brown rice • Cook more • Increase appetite for green vegetables • Eat more chicken, pork, fish, vegetables, fruit 	<ul style="list-style-type: none"> • Lose some weight • Drink less soda • Reduce the amount of soda and junk food we eat • Drink more water • Have more fruits and vegetables in our meals • Make meals for family • Preparing meals for whole family • Only go out to eat once a month • Lose weight • Learn more about foods (nutritional) • Cooking healthier meals for family

When asked in the follow-up survey sent in July to what extent they met their short-term goal, 8 of 12 (66%) responded “somewhat successful,” and 4/12 (33%) responded “very successful.” Regarding success reaching long-term goals, 6/12 (50%) responded “somewhat successful,” and 6/12 (50%) responded, “very successful.”

Discussion

Because the childhood obesity epidemic is the result of many societal trends and forces acting together, it will take all sectors of our communities, including schools, to do their part to improve knowledge, behavior, and skills. We all can agree that parents must be a part of the movement as well. If skill-based education for nutrition and healthy meal preparation is not available during the regular school day, or for schools that do have active after-school enrichment classes, our pilot after-school program outlined in this article showed some promise

towards improving some of the behaviors and attitudes that are associated with increased risk for obesity.

Our student sample reported an increase in fruit consumption, marginal increase in vegetable consumption, and perhaps most important of all, an increase in their confidence, or self-efficacy for using measuring cups/spoons, following a recipe, making a snack using fruits and vegetables and making a healthy snack that tastes good. It should be noted, however, that their initial self-efficacy for these tasks was already quite high. This was a similar trend with knowledge about weight maintenance; their initial scores were quite high, so there was no improvement noted. This would be important information for the planning committee to note if they were to replicate this program with the same school within this school district; more advanced concepts could possibly be covered. Future efforts would benefit from measuring baseline knowledge to assure they are not covering material students already know, and for true behavior change, such efforts should emphasize skill development and practice to increase self-efficacy.

Parents also did note some changes after the program; they perceived that their children were more likely to prepare a healthy snack, help to prepare a meal and help with grocery shopping. There was not a significant change in the parent's perception of their child's confidence in being able to prepare their own snack, but parents thought their children were somewhat confident even before participating in the program, which aligns with the student perceptions. There was also not a significant difference in the number of family meals or meals eaten at fast food restaurants, which is not surprising given the limited exposure of three after-school sessions. The frequency of family meals has been associated with factors such as how

important the family perceives family meals, mindful scheduling, self efficacy for meal preparation, and high levels of communication (Woodruff & Kirby, 2013).

We asked our parent/student pairs to create some short and long term goals (Table 9) during the last session, which we still believe was useful. However, several are extremely broad and somewhat vague. Perhaps we should have spent more time, given examples of measurable, realistic goals, and/or intervened more with instructor assistance for that activity.

Limitations of the present KFC pilot study include small sample size and inconsistent student attendance. This is probably typical of a free after-school offering in a suburban school. We attempted to address this problem proactively by asking parents to sign a statement on the registration form regarding the importance of attending all three sessions. Perhaps more reminders and communication with parents throughout the process would help, or charging a small fee (with scholarships available) would increase commitment. Also, finding other ways for parents to be actively involved while not being required to attend the sessions may likely increase the amount of students that could participate regularly.

A disadvantage of a hands-on format of this type of experience limits capacity to 15-30 students. To extend the program to a great number, perhaps the student participants could share what they've learned as healthy cooking ambassadors for the rest of the school. That is, they might help prepare and serve a sampling of their recipe at the school events or during lunch, help coordinate a vote between two recipes, or incorporate service-learning by creating a cookbook. Along those same lines, the recipes that were the student favorites could be included in the principal's newsletter or on the website. As this information is being shared via an electronic format, we offer the following links. The American Dairy Association's ["Fuel Up to Play 60 Program"](#) has a myriad of resources for an adult advisor (can be a parent, teacher or community

member) and student groups to organize and promote healthy food, complete with [\\$4,000 mini-grants available for schools](#). Another helpful source is [Ohio Action for Healthy Kids](#) as it contains success stories and funding opportunities for these types of projects.

The key question is: Can this be replicated in other schools readily? We believe it can, with a caveat: The collaboration of local community partners is key for success of this type of program. It may be possible to enlist chefs and instructors from local restaurants, markets and groceries, university and culinary institutes who can assist free of charge as part of their job responsibilities, and the cafeteria facility and many supplies already exist at most public schools. Michelle Obama's "Chefs Move To Schools" [website](#) has a plethora of resources.

Another resource is Ohio State Extension's EFNEP program, which is available in 18 Ohio counties. For participants that meet the income criteria, EFNEP extension agents provide a series of high-quality free nutrition sessions for students and/or parents (see <http://fcs.osu.edu/nutrition/efnep/> for more information).

In our case, we were able to obtain mini-grant funding to pay for: a) food, which was ordered economically through the already-existing school district food service vendors; b) printing of promotional flyers, posters, evaluation; c) educational supplies, d) cooking aides gifts for home use, and e) survey completion incentives. Obviously the most crucial expense is the food. With time and effort, it may be possible to obtain the donation of food supplies from local grocers, food warehouse vendors, mini-grants from local businesses, etc. Another option may be to charge a minimal fee (\$2-5 per class, per student), which may also increase commitment and attendance.

Who could coordinate this type of project? Ideally, it's best done by a small planning committee of individuals who have background and education/training in nutrition, culinary

skills and/or health education, and/or are connected to community resources. If the school district or building has a wellness committee, this may be a perfect project. If the food service director is not involved, perhaps a food service representative would be interested in assisting. Many schools may have parents with specialized training in nutrition or food science who would be willing to expend some volunteer energy helping plan a similar program. In our case, because we had a staff member from the county public health department on our planning committee, we were able to access free placemats, handouts and other resources from the local obesity prevention campaign, [“Get Up Montgomery County”](#) designed to increase healthy eating and active living. Centered on the healthy lifestyle prescription of “**5-2-1-AN**”, it encourages **5** servings of fruits and vegetables each day, less than **2** hours of screen time per day, **1** hour of physical activity each day, and **A**lmost **N**one of sugary sodas or juice-flavored drinks. Residents of our county are very likely to hear public service announcements, billboards and about community initiatives surrounding this program. These types of tie-ins and connections to local, ongoing community campaigns are essential to help reinforce and sustain some of the key health education messages beyond our cooking class sessions.

In conclusion, this paper offers insights gained from a piloted middle school cooking class in hopes of inspiring others to initiate interventions to combat childhood obesity. Schools cannot do it alone, but they can certainly be a big part of the solution, leading to healthier students able to reach their full learning potential.

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