Preventive Medicine Reports 8 (2017) 210–214

Contents lists available at ScienceDirect

Preventive Medicine Reports

journal homepage: www.elsevier.com/locate/pmedr

Meals for Good: An innovative community project to provide healthy meals to children in early care and education programs through food bank catering

Leah R. Carpenter[a,*], Teresa M. Smith[a], Katherine Stern[a], Lisa Weissenburger-Moser Boyd[a], Cristy Geno Rasmussen[a,1], Kelly Schaffer[b], Julie Shuell[b], Karen Broussard[c], Amy L. Yaroch[a]

[a] Gretchen Swanson Center for Nutrition, 8401 W Dodge Rd, Suite 100, Omaha, NE 68114, United States
[b] Nemours National Office of Policy and Prevention, 1201 15th Street NW, Suite 350, Washington, D.C. 20005, United States
[c] Agency Relations and Programs, Second Harvest Food Bank of Central Florida, 411 Mercy Drive, Orlando, FL 32805, United States

ARTICLE INFO

Keywords:
Early care and education (ECE)
Child care
Meals
Food service provider
Food bank
Catering model
Pilot program
Feasibility

ABSTRACT

Innovative approaches to childhood obesity prevention are warranted in early care and education (ECE) settings, since intervening early among youth is recommended to promote and maintain healthy behaviors. The objective of the *Meals for Good* pilot was to explore feasibility of implementing a food bank-based catering model to ECE programs to provide more nutritious meals, compared to meals brought from home (a parent-prepared model). In 2014–2015, a 12-month project was implemented by a food bank in central Florida in four privately-owned ECE programs. An explanatory sequential design of a mixed-methods evaluation approach was utilized, including a pre-post menu analysis comparing parent-prepared meals to the catered meals, and stakeholder interviews to determine benefits and barriers. The menu analysis of lunches showed daily reductions in calories, fat, and saturated fat, but an increase in sodium in catered meals when compared to parent-prepared meals. Interviews with ECE directors, teachers, parents, and food bank project staff, identified several benefits of the catered meals, including healthfulness of meals, convenience to parents, and the ECE program's ability to market this meal service. Barriers of the catered meals included the increased cost to parents, transportation and delivery logistics, and change from a 5 to a 2-week menu cycle during summer food service. This pilot demonstrated potential feasibility of a food bank-ECE program partnership, by capitalizing on the food bank's existing facilities and culinary programming, and interest in implementing strategies focused on younger children. The food bank has since leveraged lessons learned and expanded to additional ECE programs.

1. Introduction

Obesity prevalence of approximately 17% has persisted among 2–19 years olds in the United States (U.S.) since 2003, with an increase in children from low-income households (Cunningham et al., 2014; Korenman et al., 2013; Wang and Zhang, 2006; World Health Organization, 2016). Overweight children who enter kindergarten are four times more likely to be obese as adolescents and childhood obesity has been shown to track into adulthood (Guo et al., 2002; Wardle et al., 2001). Research suggests that birth to five years is a critical period for development of health behaviors; namely, improved diet and increased physical activity, which could help reduce risk for obesity and chronic disease (National Center for Education Statistics, 2009). Accordingly, innovative strategies for childhood obesity prevention are warranted, specifically those strategies that simultaneously address an increase in healthy food access (Institute of Medicine, 2012).

Early care and education (ECE) programs, that provide nurturing care, support for development, and learning experiences for children aged five and younger, are an ideal setting for obesity prevention interventions. ECE programs have wide reach, with 60% of children birth to five spending an average of 30 h per week in an ECE program (Guo et al., 2002; Ward et al., 2013; Wardle et al., 2001). Innovative approaches to obesity prevention among young children using non-traditional partners, such as food banks, that already have commercial kitchens and the infrastructure in place to prepare meals, could be paired with ECE settings to provide healthful food options to a wider audience of ECE programs.

Food banks have typically been viewed as a venue to provide

* Corresponding author.
E-mail addresses: lcarpenter@centerfornutrition.org (L.R. Carpenter), tsmith@centerfornutrition.org (T.M. Smith), kstern@centerfornutrition.org (K. Stern), lboyd@centerfornutrition.org (L.W.-M. Boyd), Cristy.geno@ucdenver.edu (C.G. Rasmussen), kellyschaffer@gmail.com (K. Schaffer), julie.shuell@nemours.org (J. Shuell), KBroussard@feedhopenow.org (K. Broussard), ayaroch@centerfornutrition.org (A.L. Yaroch).
[1] Present address: Barbara Davis Center for Diabetes, 1775 Aurora Ct, Aurora, CO 80045

http://dx.doi.org/10.1016/j.pmedr.2017.10.015
Received 25 January 2017; Received in revised form 20 October 2017; Accepted 23 October 2017

emergency food assistance to help alleviate hunger and food insecurity. However, in order to impact diet among populations they serve, food banks are shifting services to more upstream approaches that address food insecurity and root causes or determinants. These changes include offering more healthful foods to pantries (e.g., fresh fruits and vegetables) and providing nutrition education to consumers (Seligman et al., 2015). Food banks are also venturing towards innovation, including creating grocery stores and community outreach efforts to promote culinary job training, and fostering education on hunger awareness (Birch et al., 2007).

Second Harvest Food Bank of Central Florida (Second Harvest) is located in Orlando, Florida. Second Harvest collects and distributes grocery products to over 550 non-profit feeding programs in six counties and is equipped with a professional kitchen that is the centerpiece of their Community Kitchen Program. In addition to the focus on community and culinary skill building, Second Harvest is also committed to promoting programs among children birth to five. These foci, coupled with Second Harvest's kitchen facilities, culinary program, and experience catering summer meal programs led to the development of the *Meals for Good Pilot*. The project focused on production, delivery, and sustainability of providing more healthful food to ECE programs. The purpose of the evaluation was to assess the feasibility of implementing a food bank-based catering model to ECE settings, in which the lunches, beverages, and snacks provided aligned with meal patterns recommended in the Child and Adult Care Food Program (CACFP) for child care facilities (Korenman et al., 2013). It should be noted that the food used in the *Meals for Good Pilot*, as well as other summer meal catering, was purchased, and not donated.

2. Methods

2.1.1. Pilot design

The *Meals for Good* model consisted of two phases: planning and implementation. See Fig. 1, a comprehensive flowchart describing the timeline, various phases and data collection efforts for this project. In August 2014, Second Harvest began the planning phase by gauging interest in the catering model among local ECE program directors, researching Florida's Child Care Food Program (CCFP; Florida's version of CACFP) rules and regulations, planning age-appropriate healthy menus, and determining the most efficient meal transportation and delivery options.

Four ECE programs that previously operated on a parent-prepared food model, located within a 20-mile radius of Second Harvest, were recruited into the implementation phase. These programs were introduced to the project through their participation in another intervention aimed at improving nutrition and physical activity related policies and practices in ECE settings. Once recruited, materials were provided for the programs to share with parents and activities were offered onsite, such as chef visits and taste-tests to introduce catered meals to children and staff, as well as inform menu development. Since one of the four ECE programs started the program before the baseline assessment could be completed, they were deemed ineligible to participate in the *Meals for Good* pilot evaluation; accordingly, the assessment included three of the four programs originally recruited.

The implementation phase began with meal production and delivery in January 2015. At this time, Second Harvest was not a Florida CCFP approved caterer for the academic year. Therefore, the pilot project was implemented as cash-pay only; parents paid a daily fee of $5.50 per child, which covered four daily components (i.e., a morning snack, lunch, afternoon snack, and milk). Each program could opt out of some components, enroll only interested families (not the entire program), and select an individually packaged or family style meal option. These variances resulted in a different weekly cost for each program.

Initially, Second Harvest offered a 5-week menu cycle, which included both hot and cold items. The food bank-based catering model continued through August 2015, accompanied by a tracking and feedback loop

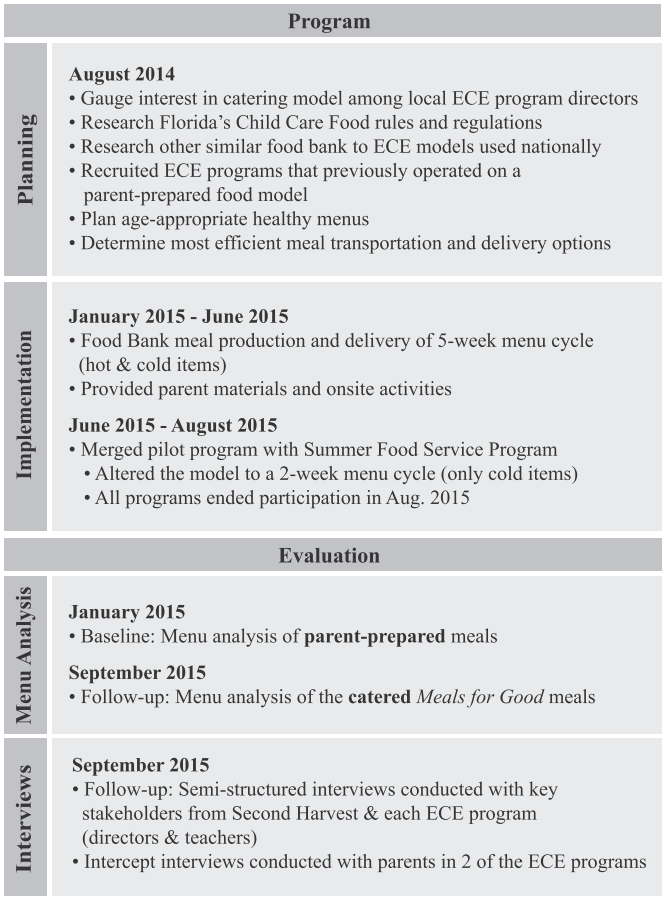

Fig. 1. Flowchart of events and dates during the pilot and implementation phase of the project, as well as data collection efforts during the evaluation.

between Second Harvest and the ECE programs. However, a change occurred in June 2015, when Second Harvest merged the pilot program with their Florida Department of Agriculture and Consumer Services supported Summer Food Service Program, which altered the model to a 2-week menu cycle. The new summer menu cycle consisted of only cold items to accommodate the volume of meals required of the Summer Food Service Program, an increase of approximately 75 meals per day to 2500 meals per day. Merging the pilot with the summer program allowed meals to be free in cost for two of the three programs because they qualified as a Summer Food Service Program site, meaning they received federal reimbursements for serving healthy meals to children in low-income areas. Although an updated version of the *Meals for Good* project was offered to programs for the Fall of 2015, including a 5-week hot and cold meal option, all three programs decided to end participation in August 2015, due to the program's inability to secure the 40-child minimum required by Second Harvest to enroll in the Fall meal service.

An explanatory sequential design of a mixed methods pre-post design was used to first assess the effect of the *Meals for Good* project on the healthfulness of the meals served and then to describe how the food bank-based catering model was implemented in participating ECE programs. The study protocol was approved by the University of Nebraska Medical Center's Institutional Review Board.

2.1.2. Menu analysis

An analysis of parent-prepared lunches was conducted at baseline in January 2015 to determine the nutrient content of food items brought from home prior to the project start date. Food items provided by the parents consisted mainly of convenience foods, such as *Lunchables®*, peanut butter and jelly sandwiches, packaged crackers,

and dairy products, such as string cheese or yogurt. Evaluators coordinated with Second Harvest and participating ECE programs to obtain direct observations (e.g., photos and accompanying descriptions on portion size) of the parent-prepared lunches. Evaluators provided Second Harvest staff with iPads for photo-taking, data collection sheets in individual program binders, and a protocol to follow. Second Harvest staff took a picture of each food and beverage item brought in by 2–5 year olds on one selected day, as well as pictures of food labels for packaged items. A photo record was completed for every photo taken, and all pictures and records were returned to evaluators for analysis using *Food Processor* nutritional software (version 10.15.41) (Food Processor Nutrition Analysis Software, 2015). The average daily amount of calories, fat, saturated fat, and sodium were calculated for each program.

At completion of the project in September 2015, a second menu analysis was conducted on the *Meals for Good* items only, for comparison to the analysis conducted on the parent-prepared meals. During the second analysis, evaluators selected one representative week during the first 5-week cycle of the pilot and used *Food Processor* to analyze each meal, resulting in a total daily amount of calories, fat, saturated fat, and sodium. Seventy-five children consumed the meals daily. Mean and median daily calories, fat (g), saturated fat (g), and sodium (mg) were reported. The non parametric Wilcoxon test was used to detect statistical differences between the parent-prepared and the *Meals for Good* items. Two-tailed tests were used, with p-values of < 0.05 considered statistically significant.

2.1.3. Interviews

At project completion, semi-structured interviews were conducted in-person and by phone with three key stakeholders from Second Harvest, directors from each ECE program (n = 3) and a sample of teachers (n = 6) from each program were interviewed in-person to collect information on their experiences with the project, including the benefits and barriers of participating in the catering model, the likelihood of using a similar meal service in the future, and feedback on the role of Second Harvest as implementers. In addition, intercept interviews were conducted with a convenience sample of parents (n = 7) at drop-off or pick-up in two participating ECE programs. Parents were asked about their satisfaction with the project, including issues around cost, food quality and variety, as well as feedback they received from their child. Second Harvest staff and program director interviews took an average of 1 h each to complete, while teacher interviews lasted 15 min each, and parent intercept interviews were 3 to 5 min. Interviews were audio recorded, transcribed, and evaluators noted emergent themes. The three programs were incentivized for their participation.

3. Results

3.1. Menu analysis

Table 1 shows the mean and median calories, fat, saturated fat, and sodium that comprised the meals documented at each program at pre-assessment (parent-prepared meals). Across all age groups (2–5 years old), the resulting medians per meal (69 meal observations) were 580.0 with a range of 190.0–3160.0 cal, 20.0 (4.5–109.0) grams of fat, 7.0 (1.5–20.0) grams of saturated fat, and 750.0 (250.0–3870.0) mg of sodium. Since the meal cycle changed mid-program, we presented total calories, fat, saturated fat, and sodium of a representative week of catered meals (May 11–15, 2015) per day, based on the menu, recipes, and labels provided by Second Harvest. Table 2 shows that the catered meals had a median of 445.0 (290.0–764.0) calories, 16.0 (5.0–30.0) grams of fat, 5.0 (3.0–8.0) grams of saturated fat, and 1085.0 (585.0–1244.0) mg of sodium. Parent-prepared meals had significantly more calories ($Z = 6.0001$, $p < 0.0001$, two-tailed), total fat ($Z = 2.3482$, $p = 0.02$, two-tailed), and saturated fat ($Z = 4.8920$, $p < 0.0001$, two-tailed) compared to catered meals. However, the catered meals had significantly higher sodium ($Z = 4.1361$, $p < 0.0001$, two tailed) content compared to the parent-prepared meals.

3.2. ECE program interviews

Salient themes emerged from the 9 interviews with ECE program directors and teachers. Themes were related to benefits and barriers of a catering model, and overall feedback on the process of *Meals for Good*. Most notable was the perception that catering meals to ECE programs benefited children, parents, and the programs.

As noted by ECE program personnel, perceived benefits to children included providing better quality foods than the processed, which were often packed by parents, and foods being offered in appropriate portion sizes. It was also mentioned by program staff that children were generally willing to try these new items, specifically fruits and vegetables that they would normally not have less access to. Another benefit conveyed by ECE personnel was that a catered meal program could have improved "marketability," specifically, increasing enrollment. Staff also noted *Meals for Good* allowed programs an opportunity to incorporate new fresh foods into their curriculum, and an opportunity to model healthy eating, as meals were also available to staff.

In addition to benefits, ECE personnel mentioned several key barriers. One key barrier cited was the daily cost, which parents were responsible for during the 5-week menu cycle from January to June 2015. Each director stated that for some parents, the catered meal was too costly, specifically for parents that had more than one child enrolled in the program. From June–August 2015, the meal service became free for parents in two programs that qualified as a Summer Food Service Program site. However, as the pilot transitioned to a 2-week menu cycle consisting of only cold items, many ECE personnel conveyed that these meals were not as well received by the children and were viewed as repetitive by staff. Logistical issues with transportation and receiving meals at each program, and lack of on-site storage and issues related to the delivery to individual classrooms were also mentioned as barriers by each program director.

3.3. Onsite parent intercept interviews

Seven parent intercept interviews were conducted. Responses were mostly positive, with parents indicating that they were pleased with the quality and convenience of the food provided.

Table 1
Mean and median energy and nutrient content of parent-prepared lunches in each program, 69 observations.

	Observations	Calories	Fat (g)	Saturated fat (g)	Sodium (mg)
Program 1[a]	16	908.13 ± 680.08	29.56 ± 23.84	8.81 ± 4.89	1113.75 ± 823.72
Program 2[a]	28	540.36 ± 226.69	18.75 ± 9.34	6.39 ± 3.45	853.57 ± 312.43
Program 3[a]	25	662.40 ± 185.55	23.0 ± 7.93	8.34 ± 3.53	782.00 ± 427.51
Daily mean[b]	69	669.86 ± 393.53	22.80 ± 14.13	7.66 ± 3.94	887.97 ± 519.18
Daily median[c]	69	580.0 (190.0–3160.0)	20.0 (4.5–109.0)	7.0 (1.5–20.0)	750.0 (250.0–3870.0)

[a] Data are presented as mean ± SD for each program separately.
[b] Data are presented as mean ± SD for total participants.
[c] Data are presented as median (range) for total participants.

Table 2
Mean and median energy and nutrient content of new 5-week menu cycle items in one sample week (an average of 75 children served daily during Jan to June).

	Menu items	Observations	Calories	Fat (g)	Saturated fat (g)	Sodium (mg)
Day 1[a]	Mac & cheese, steamed carrots, blueberry crisp, milk	75	290	5	3	585
Day 2[a]	Turkey and cheese sliders with ranch, cucumbers, pineapple, milk	75	495	25	8	1145
Day 3[a]	Sweet & sour meatballs and yellow rice, steamed green beans, grape juice, milk	75	420	15	5	1010
Day 4[a]	Italian sliders, broccoli slaw, mandarin oranges, milk	75	445	16	5	1085
Day 5[a]	Popcorn chicken on a sub roll with honey mustard, lettuce & tomato, diced peaches, milk	75	764	30	6	1244
Daily mean[b]		375	483.15 ± 155.98	18.23 ± 8.64	5.40 ± 1.62	1014.93 ± 226.89
Daily median[c]		375	445.0 (290.0–764.0)	16.0 (5.0–30.0)	5.0 (3.0–8.0)	1085.0 (585.0–1244.0)

[a] Data are presented as sums for each day separately.
[b] Data are presented as mean ± SD for total participants.
[c] Data are presented as median (range) for total participants.

The majority of parents interviewed, indicated that catered meals influenced foods prepared by parents at home. Parents cited replicating favorite items and making conscious decisions about portion sizes. Parents conveyed that their children were generally more satisfied with the quality of meals during the 5-week menu cycle (compared with the 2-week cold menu cycle), but that the expense was a barrier, especially if they had more than one child in the program.

3.4. Second harvest interviews

Second Harvest staff (n = 3) described several lessons learned from this pilot program. For one, they determined it was vital for a food bank vendor to become an approved CCFP caterer and to connect with the local Child Care Recourse and Referral agency in order to be considered for larger food service contracts (e.g., Head Start). However, building adequate time into the planning process was also deemed essential. In addition, Second Harvest staff suggested that meals should be implemented program-wide, instead of an opt-in/out model. Future interventions could have increased success if programs are provided with materials, explaining the process and benefits to children and parents, including the source of the food (e.g., that food was not donated). Since then, Second Harvest has developed a toolkit for other food banks to use when implementing this model, which includes customizable collateral materials (https://healthykidshealthyfuture.org/state-local-leaders/supporting-your-cause/).

4. Discussion

Childhood obesity prevention efforts, including increased availability and accessibility of healthy foods in age-appropriate portion sizes within ECE settings, have the potential to increase awareness and exposure to these foods and help develop and solidify healthful dietary patterns early in life (L. Birch et al., 2007). The *Meals for Good* food bank-based catering model provided healthier snacks and meal options to children in ECE and had many perceived benefits conveyed by ECE program personnel, parents, and program implementers. The new catered meal service was regarded as healthy, convenient, and generally age-appropriate by both program staff and parents. Although catering-based meal programs have not been previously identified as a childhood obesity prevention strategy (likely due to nascency of this approach), this pilot demonstrates the feasibility of implementing such a program in ECE settings, and potential effectiveness in reducing calories, fat, and saturated fat. However, cost to parents was considered sometimes prohibitive, as were some logistical issues, such as food transport and delivery; ultimately leading the three ECE programs to discontinue service. More research is warranted to continue to examine benefits and barriers to the *Meals for Good* approach on a larger scale. Food banks, similar to Second Harvest, may provide effective implementation of similar catering models within ECE programs nationally.

Menu analysis findings showed that the new catered menu items had a lower average amount of calories, fat, and saturated fat, which aligns more closely with the Healthy, Hunger-Free Kids Act of 2010's dietary recommendations for children, which includes improving school lunch standards in K–12 (Newson et al., 2013). Although there was a positive decrease in calories, fat and saturated fat with the catered meals in the current study, sodium generally increased. Future programming should carefully consider how to reduce sodium in the snacks and meals in ECE settings (Yang et al., 2012) but in doing so, may consider how taste can adapt to sodium. Therefore, a purposeful, yet gradual approach to reducing sodium content may be necessary (Birch et al., 2015; Cohen et al., 2015). Although related work has mainly been conducted in K-12, more attempts are being made to implement policy and environmental approaches (e.g., nutrition standards) for preschool children through improvements to CACFP, as well as non-federal efforts (World Health Organization, 2016). As food options in ECE settings are examined and modified, another aspect to consider is promoting and serving smaller portion sizes, and ensuring accompanying energy and nutrient values are age appropriate (Schwartz et al., 2015). Literature shows that children will eat healthier meals if they are repeatedly exposed to them (Brown and Ogden, 2004; Nicklas et al., 2001). The current model of providing healthful, catered meals underscores this concept and should be replicated across ECE settings (Dietary Guidelines Advisory Committee, 2010).

Overall, many perceived benefits were noted by the various stakeholders. Second Harvest was able to maximize their reach by leveraging their experience and lessons learned into partnerships with new ECE programs in their geographic region, particularly several large sites that qualify for federal meal reimbursements, so that parents did not bear the brunt of meal costs. In addition, a local courier also saw value in the catering model from a business perspective, and invested in several new refrigerated trucks in order to partner with Second Harvest to transport and deliver meals to these new programs. Next, given that parents perceived the *Meals for Good* model as providing better quality food than the previous model, ECE programs discussed how participating in this project was a marketable asset that they intended to promote and grow their program enrollment. Implementing this model enabled Second Harvest and other entities to partner and promote their programs' missions with new and expanded audiences.

On a broader level, these types of interventions may affect parental knowledge, family involvement in ECE, and the child development field. Parents in this study indicated that children liked the new foods they had not previously tried, and, as a result, parents began to incorporate some of the new menu items and behaviors (e.g., portion control) into the home environment, a strategy that has been previously linked to encouraging an improved diet among children (Caton et al., 2013; Cooke, 2007).

Ultimately, none of the programs chose to continue *Meals for Good* due to their inability to recruit the minimum number of families interested in order to meet Second Harvest's requirements. One plausible solution to increase buy-in would be to implement the meal service at

the beginning of the year. The pilot started in January of 2015 and parents had previously signed a program contract at the beginning of the Fall semester, which did not include the weekly cost of food service, therefore the *Meals for Good* pilot was an added cost. Starting such a service in conjunction with the program's contract schedule would enable ECE programs to include the cost of catering in the overall program cost, which along with convenience, may increase long-term interest from the parents. In addition, encouraging parents to fill out the necessary paperwork so that the whole site would qualify for reimbursable meals could also help to offset concerns around cost, and make these healthier options more affordable for families.

4.1. Program and evaluation limitations

Limitations to the evaluation included the small nature of the pilot and the timing of the baseline data collection, which resulted in only three centers as a source of data throughout the project, and limited generalizability. Next, the variations in catering options and cost, as well as changes made to the program during the pilot created difficulty in pre/post measurement, as each site had a slightly different experience. As with other self-reported data, interview bias was another constraint. Lastly, the implementers completed data collection forms and took pictures, introducing some bias but they were given a protocol to mitigate bias and this was the only method feasible for this pilot.

5. Conclusion

Childhood obesity rates continue to be a national concern, prompting the need for innovative prevention strategies. Environmental-level interventions, which include promoting good nutrition need to start early in childhood, so that healthier eating habits are developed early and carried throughout the life course: ECE settings an ideal site for increasing access to healthier food. Food banks are well-suited to partner with ECE to implement nutrition interventions, given their inherent sense of community responsibility, and existing facilities, staff, and infrastructure. This pilot demonstrated that replacing mainly processed lunches with catered scratch-cooked meals is one way in which food banks can collaborate with ECE and foster obesity prevention in young children. Despite the barriers addressed during this pilot, numerous benefits were also identified. Second Harvest has leveraged these key takeaways in order to expand this model to additional ECE programs, including a Head Start program requiring over 4000 meals per day.

Conflict of interest

The authors declare that they have no conflict of interest.

Acknowledgements

The authors would like to thank Catherine Plumlee, MPH and Dr. Daniel Schober, PhD, for their contribution to the research plan and baseline data collection, as well as Nancy Brumbaugh, Food Service Director at the Second Harvest Food Bank of Central Florida for her guidance during the menu review process.

This research was supported the General Mills Foundation and the Nemours National Office of Policy and Prevention (Prime Cooperative Agreement: 1U58DP004102-01).

References

Birch, L., Savage, J.S., Ventura, A., 2007. Influences on the development of children's eating behaviours: from infancy to adolescence. Canadian Journal of Dietetic Practice and Research: A Publication of Dietitians of Canada = Revue Canadienne de La Pratique et de La Recherche En Dietetique: Une Publication Des Dietetistes Du Canada 68 (1), s1–s56.

Birch, L.L., Savage, J.S., Fisher, J.O., 2015. Right sizing prevention. Food portion size effects on children's eating and weight. Appetite 88, 11–16. http://dx.doi.org/10.1016/j.appet.2014.11.021.

Brown, R., Ogden, J., 2004. Children's eating attitudes and behaviour: a study of the modelling and control theories of parental influence. Health Educ. Res. 19 (3), 261–271. http://dx.doi.org/10.1093/her/cyg040.

Caton, S.J., Ahern, S.M., Remy, E., Nicklaus, S., Blundell, P., Hetherington, M.M., 2013. Repetition counts: repeated exposure increases intake of a novel vegetable in UK preschool children compared to flavour–flavour and flavour–nutrient learning. Br. J. Nutr. 109 (11), 2089–2097. http://dx.doi.org/10.1017/S0007114512004126.

Cohen, J.F.W., Richardson, S.A., Cluggish, S.A., Parker, E., Catalano, P.J., Rimm, E.B., 2015. Effects of choice architecture and chef-enhanced meals on the selection and consumption of healthier school foods: a randomized clinical trial. JAMA Pediatr. 169 (5), 431–437. http://dx.doi.org/10.1001/jamapediatrics.2014.3805.

Cooke, L., 2007. The importance of exposure for healthy eating in childhood: a review. J. Hum. Nutr. Diet. 20 (4), 294–301. http://dx.doi.org/10.1111/j.1365-277X.2007.00804.x.

Cunningham, S.A., Kramer, M.R., Narayan, K.M.V., 2014. Incidence of childhood obesity in the United States. N. Engl. J. Med. 370 (5), 403–411. http://dx.doi.org/10.1056/NEJMoa1309753.

Dietary Guidelines Advisory Committee, 2010. Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010, to the Secretary of Agriculture and the Secretary of Health and Human Services. Agricultural Research Service.

Food Processor Nutrition Analysis Software, 2015. (Version 10.11.0). ESHA Research. Retrieved from. http://www.esha.com/products/food-processor/.

Guo, S.S., Wu, W., Chumlea, W.C., Roche, A.F., 2002. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. Am. J. Clin. Nutr. 76 (3), 653–658.

Institute of Medicine, 2012. Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation. The National Academies Press, Washington, DC. http://dx.doi.org/10.17226/13275.

Korenman, S., Abner, K.S., Kaestner, R., Gordon, R.A., 2013. The Child and Adult Care Food Program and the nutrition of preschoolers. Early Childhood Research Quarterly 28 (2), 325–336. http://dx.doi.org/10.1016/j.ecresq.2012.07.007.

National Center for Education Statistics, 2009. Table 44. Number of Children Under 6 Years Old and Not Yet Enrolled in Kindergarten, Percentage in Center-based Programs, Average Weekly Hours in Nonparental Care, and Percentage in Various Types of Primary Care Arrangements, by Selected Child and Family Characteristics: 2005. Retrieved January 12, 2016, from. http://nces.ed.gov/programs/digest/d09/tables/dt09_044.asp.

Newson, R.S., Elmadfa, I., Biro, G., et al., 2013. Barriers for progress in salt reduction in the general population. An international study. Appetite 71, 22–31. http://dx.doi.org/10.1016/j.appet.2013.07.003.

Nicklas, T.A., Baranowski, T., Baranowski, J.C., Cullen, K., Rittenberry, L., Olvera, N., 2001. Family and child-care provider influences on preschool children's fruit, juice, and vegetable consumption. Nutr. Rev. 59 (7), 224–235. http://dx.doi.org/10.1111/j.1753-4887.2001.tb07014.x.

Schwartz, M.B., Henderson, K.E., Read, M., Danna, N., Ickovics, J.R., 2015. New school meal regulations increase fruit consumption and do not increase total plate waste. Childhood Obesity (Print) 11 (3), 242–247. http://dx.doi.org/10.1089/chi.2015.0019.

Seligman, H.K., Lyles, C., Marshall, M.B., et al., 2015. A pilot food bank intervention featuring diabetes-appropriate food improved glycemic control among clients in three states. Health Affairs (Project Hope) 34 (11), 1956–1963. http://dx.doi.org/10.1377/hlthaff.2015.0641.

Wang, Y., Zhang, Q., 2006. Are American children and adolescents of low socioeconomic status at increased risk of obesity? Changes in the association between overweight and family income between 1971 and 2002. Am. J. Clin. Nutr. 84 (4), 707–716.

Ward, D.S., Vaughn, A., Story, M., 2013. Expert and stakeholder consensus on priorities for obesity prevention research in early care and education settings. Childhood Obesity (Print) 9 (2), 116–124. http://dx.doi.org/10.1089/chi.2013.9204.

Wardle, J., Guthrie, C.A., Sanderson, S., Rapoport, L., 2001. Development of the Children's Eating Behaviour Questionnaire. J. Child Psychol. Psychiatry 42 (7), 963–970. http://dx.doi.org/10.1111/1469-7610.00792.

World Health Organization, 2016. Report of the Commission on Ending Childhood Obesity.

Yang, Q., Zhang, Z., Kuklina, E.V., et al., 2012. Sodium intake and blood pressure among US children and adolescents. Pediatrics 130 (4), 611–619. http://dx.doi.org/10.1542/peds.2011-3870.