Integrative Nutrition and Health Models Targeting Low-Income Populations: A Pilot Intervention in Three Food Banks

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In 2012, The Academy of Nutrition and Dietetics (Academy) introduced their Future of Food Initiative. This initiative aims to address domestic and global food and nutrition security, as well as consumers’ interest in a safe and healthy food supply, through education, communication, and research. This initiative has provided the Academy with opportunities for collaboration with other organizations concerned about food security, including Feeding America (FA), a leading domestic hunger relief organization supporting a network of over 200 food banks, annually serving 46.5 million people facing food insecurity. Individuals and families facing food insecurity lack access to sufficient amounts of nutrient-rich foods. Food banks serve as valuable resources to lessen hunger in communities facing food insecurity. Food bank clients also often lack access to health-promoting resources such as health screenings and other medical services. According to a comprehensive hunger report published by FA, nearly half (47%) of food bank clients report that they are in fair or poor health, and 31% report having to choose between paying for food and medical expenses each month.

As part of its Future of Food Initiative, the Academy of Nutrition and Dietetics Foundation (Academy Foundation) had the opportunity to collaborate with FA in a unique project to address the intersecting health needs of food bank clients. Funded by Morgan Stanley, the Healthy Cities intervention uses a “supersetting” approach; this approach recognizes that health interventions are most effective when they take place in people’s everyday environment. This integrative nutrition and health model takes an ecological approach to health promotion, recognizing that 1) multiple levels of influence exist for health behavior change, 2) environmental contexts are significant determinants of health, and 3) influences of behavior interact across levels. Primary prevention interventions are those that aim to prevent onset of disease through education and behavioral strategies, such as those related to physical activity and nutrition. Health promotion efforts aimed at children and adolescents may lay the foundation for a lifetime of primary prevention health behaviors; approximately 39% of households served by FA have at least one child younger than 18 years, and 94% of these families are eligible for free or reduced-price meals through the Federal School Breakfast and Lunch Programs. Figure 1 displays the conceptual model of the Healthy Cities intervention: because schools are a part of children’s everyday lives, health behaviors of children and adolescents are targeted by making schools the primary community hub or “supersetting.”

The overall objective of this proof-of-concept pilot intervention was to determine the feasibility of using community food banks as the primary facilitators of the partnerships necessary for an integrated nutrition and health services program aimed at households with children. We propose food banks as primary facilitators because food distribution acts as a primary driver when bringing communities together. Furthermore, many food banks have experience with federally funded school nutrition programs, as well as nutrition education programs. The end goal of this project is to determine how local community food banks can best serve as lead coordinators of school-based community programs that improve access to healthy food, nutrition education, physical activity, and primary care preventive health screenings and treatments such as vision, dental, and immunization. This paper describes the first phase of the implementation of the Healthy Cities Project.

Program Development and Implementation

The Healthy Cities program is an integrated nutrition and health services program that was piloted in three different FA network food banks between August 2014 and May 2015. Morgan Stanley and FA chose the pilot sites for this proof-of-concept study. The selected sites were the Alameda County Community Food Bank in Oakland, CA; the Greater Chicago Food Depository in Chicago, IL; and the Community Food Bank of New Jersey in Newark. Each of the pilot sites was required to provide food distribution, nutrition education, health screenings, and safe places to play; the sites were given autonomy on how each of these four intervention components would be implemented. This autonomy included decision-making power over which organizations to partner with for provision of integrated services, and logistics for each of the required components.
PROFILES OF PARTICIPATING FOOD BANKS

The Alameda County Community Food Bank provides enough food for 380,000 meals weekly, distributed through 240 local nonprofit agencies. With a commitment to increase fruit and vegetable distribution, the food bank provided 24 million meals to families in 2014, half of which consisted of fruits and vegetables. In an effort to alleviate hunger, the food bank operates hunger and nutrition education programs, advocacy programs, a multilingual CalFresh/SNAP-Ed (Supplemental Nutrition Assistance Program Education) outreach program, and an emergency food helpline that assists 8,000 adults and children monthly. The food bank serves one in five county residents, and two-thirds of those served are children.

The Greater Chicago Food Depository distributes food through a network of 650 pantries, soup kitchens, shelters, and mobile outreach programs to alleviate food insecurity for more than 812,100 adults and children annually. In 2014, the Greater Chicago Food Depository distributed 67 million pounds of food, including 22 million pounds of produce.

The Community Food Bank of New Jersey reaches 900,000 people, providing food as well as education and training, and also engages in advocacy efforts. This food bank serves approximately 1,050 partner agencies and also the surrounding communities through their Mobile Pantry Program. The Community Food Bank of New Jersey also offers child nutrition programs, including Kids Cafe and Backpack programs and a Food Service Training Academy, where students are involved in the preparation of meals for Kids Cafe programs.

PROCESS EVALUATION TOOLS

To assess implementation efforts and identify challenges associated with piloting an integrative nutrition and health program, the Academy Foundation developed survey tools to be administered to multiple key stakeholders. Surveys assessing formation of partnerships, characteristics of the partnerships, communication strategies used, and challenges and successes with required program components were sent to pilot program sites and identified partners at the beginning, middle, and end of the intervention. Site visits, qualitative interviews, monthly phone calls, and monthly logs of quantitative measures for each of the four required components were also conducted throughout the pilot intervention.

INITIAL FINDINGS

Seventeen different organizations were identified as partners of the three pilot sites (Alameda County, n=7; Chicago n=4; New Jersey n=6). Program pilot sites reported food distribution and nutrition education as the easiest to implement, whereas health screenings and safe places to play were considered more difficult to implement. Figure 3 summarizes the types of activities and services provided to satisfy each of the four component requirements of the integrative nutrition and health program.

Impact

Impact for each of the required components was measured through monthly data collection reports. Over

Figure 1. Healthy Cities Integrative Nutrition and Health Model.

Figure 2. Ecological approach to Healthy Cities Integrative Nutrition and Health Model.

Impact for each of the required components was measured through monthly data collection reports. Over
a period of 13 months, 703,911 pounds of food were distributed to 31,205 households, including 64,495 children (55% of the population served). Of the food distributed, 74% was produce and 26% was shelf-stable food. More than 10,000 nutrition education resources (eg, tips sheets, recipe cards) were distributed, which averages 803 pieces of nutrition information per month. More than 1,200 health screenings or treatments for children were provided, including measurement of height, weight, and body mass index; blood pressure assessment; dental examinations and treatment; vision screening and glasses distribution; physical examinations; and immunizations.

### Feasibility of Implementation

Enhancing food distribution with opportunities for clients to be involved in nutrition education, health screening and treatment, and opportunities for physical activity was successfully demonstrated in three diverse communities through the Healthy Cities program. Although food banks have a proven track record of securing and distributing nutrient-rich food to families facing food insecurity, the Healthy Cities program positioned them as a primary facilitator for community health. Although all three pilot sites offered the same four program components—food distribution, nutrition education, health screenings, and safe places to play—the types of services and partnerships used to provide them differed based on the client needs in each community. This is important to note because it demonstrates that despite differences in resources and needs among communities, the Healthy Cities approach is feasible.

### FUTURE PLANNING

The Healthy Cities pilot program has helped establish training needs required for future food banks to coordinate similar interventions. The use of schools as community hubs is an optimal way to improve access to a variety of services for families with children, with the additional benefit of attracting other local community members in need of integrative nutrition and health services. The pilot study provided insights into the organizational characteristics necessary for successful partnerships and the implementation of the four components of the Healthy Cities program. These insights have already informed the pilot program expansion in Cleveland, OH, and Houston, TX, from 2015 to 2017, with two additional sites to be added in 2016 to 2018. Data continue to be collected on the barriers to and facilitators of dissemination and implementation of a comprehensive integrative nutrition and health program. Future expansion also may include collection of client-level data to determine the effectiveness of this model on food security and health outcomes associated with improved access to nutrition education, physical activity, and health screenings.

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<thead>
<tr>
<th>Pilot site</th>
<th>Food distribution</th>
<th>Nutrition education</th>
<th>Health screening</th>
<th>Safe places to play</th>
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<tbody>
<tr>
<td>Alameda County Community Food Bank, Oakland, CA</td>
<td>Produce and shelf-stable foods</td>
<td>Recipes</td>
<td>Dental screenings at food distribution sites</td>
<td>Playground at school</td>
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<td></td>
<td>Planned distribution days at schools and library sites</td>
<td>Tips for using food</td>
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<td>Hula hoops and balls at library and schools</td>
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<td>Food demonstrations</td>
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<tr>
<td>Greater Chicago Food Depository, Chicago, IL</td>
<td>Produce and shelf stable foods</td>
<td>Recipes</td>
<td>Immunizations</td>
<td>Chicago Run mileage program</td>
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<td>School-based (elementary) food pantry for weekly distribution</td>
<td>Tips for using food</td>
<td>Physicals</td>
<td>Indoor recess ideas</td>
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<td>Food demonstrations</td>
<td>Height/weight screenings</td>
<td>Family fun runs</td>
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<td>Share Our Strength</td>
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<td>Cooking Matters for parents and children</td>
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<td>Community Food Bank of New Jersey, Newark</td>
<td>Produce</td>
<td>Recipes</td>
<td>Dental</td>
<td>After school physical activity program (includes training for facilitators and tool kit)</td>
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<td>After-school program, mobile-based pantry for weekly distribution</td>
<td>Tips for using food</td>
<td>Vision</td>
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<td>Farm field trips</td>
<td>Height/weight screenings at food distribution site</td>
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<td>Monthly lessons at food distribution site</td>
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**Figure 3.** Implementation of Healthy Cities Program components.
IMPLICATIONS FOR NUTRITION AND DIETETICS PRACTITIONERS

Registered dietitian nutritionists (RDNs) working in food banks, schools, health centers, or community organizations are well positioned to lead efforts to increase healthy food access and nutrition education in the communities in which they serve. Schools are an optimal location for food distribution, as well as nutrition education, physical activity, and health interventions aimed at children and their families. RDNs working or volunteering in a variety of settings might consider offering after-school cooking programs or hands-on tasting activities and education at school food distributions. RDNs have the potential to add value to such collaborative efforts in their community. As the Academy Foundation and FA continue to collaborate on the ongoing development and implementation of the Healthy Cities Initiative, resources and tool kits will be made available to Academy members, providing increased opportunities for member involvement in the Future of Food initiative.

References

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STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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