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## **Brighter Sights: Using Photovoice for a Process Evaluation of a Food Co-op Style Nutrition Intervention**

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### **ABSTRACT**

Access to healthy food is a critical factor impacting childhood obesity. Brighter Bites is a school-based program that addresses the issue of fresh food access among low-income families living in food deserts using a food co-op model. The aim of this study is to evaluate initial parent participant reactions to the ongoing Brighter Bites program using Photovoice. A predominately Hispanic, economically disadvantaged, urban school was chosen as the site for the Photovoice project. A total of seven Brighter Bites parent participants were enrolled and six completed the study. The participants developed research questions, took documentary photographs, completed a group analysis of the resulting photos, selected key images and created accompanying captions for a community event. During analysis of the photographs by the group, eight major themes emerged including: impact on the family food budget, produce quality, exposure to unknown fruits and vegetables, socializing with other parents, strategies to use/get children to eat produce, child curiosity of program, and children having fun helping with produce. These themes informed researchers of possible target areas for future program development and quality improvement. The positive nature of most photographs and comments suggests the program is being accepted in the community and impacting local families with regard to food access, food security and healthy eating behaviors.

**Keywords:** Photovoice; community based participatory research; quality assessment; nutrition

### **INTRODUCTION**

In the last 20 years, childhood obesity has risen to the forefront of national health issues with rates tripling since 1980 and remaining high and steady for the last 10 years. In 2012, almost 17% of children were obese and over 31% were overweight or obese (Levi, 2013). Access to healthy food is an environmental factor in the socio-ecological model of childhood

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obesity (Lytle, 2009). Those without access to healthy food may live in “food deserts”, a term broadly used to refer to low-income urban areas with minimal access to healthy, reasonably priced food (Cummins & Macintyre, 2002). Without access to diverse grocery stores or farmers markets, residents of food deserts may be limited to smaller convenience stores that carry foods high in energy, sodium and fat (Moodie et al., 2013). Brighter Bites is a school-based food co-op, providing fresh produce and nutrition education to improve dietary habits among low-income children and their parents (Sharma et al., 2015; Sharma et al., 2016).

Photovoice is a qualitative research method that uses photography and discussion to better understand a particular community issue (C. Wang & Burris, 1997). Photovoice has been used across four continents in partnership with local and international organizations to impact and empower thousands of disenfranchised or at-risk individuals. Resulting photos are displayed in a public setting or at a planned event to create awareness around certain issues and reactions to the showing are documented. This study employed the Photovoice method as a quality assessment tool to better understand initial participant perceptions of the Brighter Bites program. The use of Photovoice as a process evaluation tool is rare but has been successfully demonstrated in recent studies. One study used Photovoice to document the barriers and benefits of an adolescent cooking intervention (Thomas & Irwin, 2013). Another study used Photovoice to evaluate the implementation of a six-year Community Health Initiative (Kramer, Schwartz, Cheadle, & Rauzon, 2013).

Beyond the rich qualitative data that the Photovoice method provides, it also serves to empower participants by giving them an element of control over the research being conducted in their communities. This empowerment has been shown to promote research skills and understanding in groups participating in Photovoice projects (Martin, Garcia, & Leipert, 2010). The Brighter Bites program shares this critical paradigm with the methodology and philosophy of Photovoice, which is to empower program participants to be actively involved in decisions that affect them, thus improving the quality and relevance of the program.

Photovoice methodology fits into the broader scope of community based participatory research (CBPR). CBPR grew out of the “action research” of the 1940s and since the 1970s has come to represent a combination of social science and social activism. CBPR is an alternative to traditional research in that it engages communities throughout the research process, focuses on community needs, and emphasizes the strengths of community members (Minkler & Wallerstein, 2011).

The primary aim of this study is to evaluate initial parent participant reactions to the ongoing Brighter Bites program using Photovoice. This study follows CBPR principles by engaging participants throughout the entire research process: from research question development to analysis and dissemination. The goals of the study were left broad to allow for flexibility as the community developed research questions they felt were most important. As Brighter Bites depends on participant engagement, Photovoice is an appropriate method for evaluating initial reactions to the program. The further goal of the project was to empower parents to voice their opinions on the benefits and areas in need of improvement of the Brighter Bites program through documentary photography and group discussions. The images captured by participants and resulting discussion, coupled with previously collected process survey data will help enable a robust initial evaluation of the program from the perspective of its primary beneficiaries.

## **METHODS**

### **Brighter Bites Program Description**

Brighter Bites is a community-academic partnership between the University of Texas School of Public Health, local food banks and local school systems. Brighter Bites offers an innovative model for increasing access to fresh produce by supplying direct fruit and vegetable delivery to low-income families through local schools. Brighter Bites includes three key components: 1) Weekly distribution of approximately 30 pounds of fresh, seasonal produce for 16 weeks in the school year and 8 weeks in the summer; 2) Nutrition education consisting of bilingual (English and Spanish) parent nutrition handbooks and implementation of Coordinated Approach To Child Health (CATCH), an evidence-based Texas Education Agency-approved, coordinated school health program in schools (Hoelscher et al., 2001); and 3) A fun food experience for the family during the produce pick up consisting of recipe demonstrations utilizing fresh produce from that week's distribution. Program eligibility for schools is that >90% of the children are on the free/reduced National School Lunch Program or it is a Title I school.

The program uses a co-op concept whereby the produce is delivered in pallets to schools directly from local food banks; it is then unloaded, separated, bagged and distributed by volunteer parents and community members. Cost of produce is low, approximately \$2.00 to \$3.00 per family per week for 30 lbs. of fresh produce, made possible by using donated produce from the food banks. At least one program coordinator is assigned to each school and supports the execution of the food distributions. Coordinators also conduct recipe demonstrations during produce pick up time with the help of the volunteers. On a given week, participants will have 10-12 different kinds of fresh, seasonal produce in their bags. Schools are trained in the implementation of CATCH and provided with necessary equipment and materials. Each school designates a CATCH champion for training to spearhead the implementation of CATCH at their respective schools. Often, this is a physical education teacher or school nurse. All program components are available at no cost to the schools or families. During the 2013-2014 school year and summer, Brighter Bites served over 2,000 families in Houston with 1 million pounds of primarily donated fresh produce sourced from the Houston Food Bank. In the 2014-2015 school year, Brighter Bites grew exponentially to serve 3,350 children and their families in the Houston area and 1,800 in Dallas.

### **Data Collection**

Brighter Bites researchers worked closely with staff and key parent volunteers at one local public school to purposefully sample parents participating in Brighter Bites. This school was chosen as they had a particularly active parent group, and school leadership was enthusiastic about the Photovoice project when initially contacted by researchers. All Brighter Bites families were invited to participate. Parents were first contacted through a Brighter Bites parent liaison at the school and were then contacted via email or in person by study staff if they were interested in participating in the Photovoice project. The criteria for participation in the study included being the parent of a child enrolled in the Brighter Bites program, have the ability to speak and read English and have the ability to attend all discussion sessions.

The Photovoice program included the following: i) an introductory session including the development of research questions by the parents, ii) a two-week period for participants to take documentary photographs in response to the questions, iii) a second discussion session to analyze the resulting photographs, iv) individual follow-up discussions with participants to identify relevant quotes and comments accompanying the photos and v) a final community event to

showcase the photographs and themes. All discussions were held in English. Signed consent and appropriate media release forms were obtained for each participant. This study was approved by the University of Texas Health Science Center Institutional Review Board: HSC-SPH-12-0480. The introduction session included an overview of the Photovoice method, ethics when taking pictures and basic photography skills. Participants also worked as a group to develop two research questions. These research questions served to guide the remainder of the project. In order to facilitate the creation of these questions, the researchers explained the intent of the project and had participants suggest ideas that were written on a large blackboard. The group then refined the ideas into possible research questions and all agreed on two final resulting questions.

The participants were then given cameras and asked to take relevant photos to help answer the questions. Study participants were requested to take at least 10 pictures within a two-week period. Research staff was available via email and phone to answer any questions and checked in with the participants during the weekly Brighter Bites distributions to address any concerns the parents had during the photographing process.

#### Group Data Analysis

After the resulting photographs were developed, the group met for a second discussion session to analyze the resulting images and organize them into themes. The facilitator used the SHOWeD questions strategy (C. C. Wang, 1999) to help guide participants. SHOWeD questions include: What do we **see** here? What is really **happening** here? How does this relate to **our** lives? **Why** does this situation, concern or strength exist? What can we **do** about it? Sessions were led by two discussion facilitators and a note-taker. The meetings were not audio recorded. After the discussion and analysis of the participant photographs, each parent selected two of their photos they felt highlighted the themes. In individual follow up meetings, the participants created captions for each of the selected photographs. The photos were then enlarged, printed, and displayed for a community event. Dissemination of the project results through the display of the photographs to community leaders is an important step in the Photovoice process (C. C. Wang, 1999).

The thematic breakdown of the resulting photographs was decided by the participants, with guidance from the facilitators. The participants were first given all of their photos to review individually and asked to select 10 key photos to discuss with the group. In total, 60 photographs were analyzed by the group. Each individual participant displayed their selected photos for the group and spoke about the context surrounding each image. The participants began identifying patterns and subsequently themes within the photos. The content of the photos was noted, discussed and organized into participant-named categories. The discussion facilitator, trained in Photovoice methodology, helped the participants assign and label the emerging themes. Participants decided if the resulting themes were appropriate or needed to be changed, merged or split. The discussion facilitator took consensus to ensure all participants and research staff agreed on the theme of each individual photograph. The participants had additional discussions about the overall meaning of the photographs and the correlation to the evaluation questions. A similar group-based multi-step process for qualitative data analysis has been used in previous studies (Jackson, 2008). Images, discussion notes and captions from the study were all uploaded to NVIVO Version 10 (QSR International) for secure storage.

## RESULTS

A predominately Hispanic (95%), economically disadvantaged (89% eligible for free and reduced lunch) urban school (Seger, 2015) was the site for the Photovoice project. A total of seven Brighter Bites parents were enrolled and six completed the study. One participant could not finish due to conflicts with discussion session times. All participants were Latina women that actively volunteered with the Brighter Bites program at the school. Two research questions (RQs) were developed by participants: RQ1: How has Brighter Bites impacted my family's lifestyle? and RQ2: How are children responding to the Brighter Bites program? During analysis of the photographs by the group, eight major themes emerged. These questions and themes are described in detail below. Five themes focused on lifestyle impact (RQ1) and two on children (RQ2). Two other themes also emerged that did not relate directly to either of the RQs but were of general interest. The themes and relevant captions from participants are shown in Table 1 and Table 2. Participants were generally enthusiastic about the program and its benefits. This attitude is supported by program-wide survey data showing over 90% of participants perceived the program to be effective at changing family food habits (Sharma et al., 2015; Sharma et al., 2016).

| <b>Table 1: Themes that emerged during group discussions</b>            |   |  |
|---|---|--|
| <b>RQ 1: How has Brighter Bites impacted my family's lifestyle?</b>     |   |  |
| <b><u>Theme</u></b>   | <b><u>Participant Comments</u></b>  | <b><u>Areas of impact</u></b>                  |
| <b>Impact on family food budget</b>                                     | <i>Thanks to Brighter Bites, my family has the blessing to be able to consume more fruits and vegetables; our budget doesn't cover enough to buy fruits and vegetables every week because my husband is paid every two weeks.</i>                                     | Educational materials / Social network support |
| <b>Exposure to unknown fruits and vegetables</b>                        | <i>One week they gave us a lot of these persimmons. I was looking for recipes that would use them up so they wouldn't go to waste and ended up making easy and delicious persimmon bars from an online recipe.</i>  | Educational materials                          |
| <b>Socializing with other BB parents</b>                                | <i>Brighter Bites distributions take hours, which I enjoy, and it's nice getting to know each other a little bit more through volunteering. At first you had no idea who the other volunteers were, and just getting to know them was amazing.</i>                    | Social network support                         |
| <b>Strategies to get kids eating fruits and vegetables</b>              | Healthy swaps, Add to traditional dishes, Make it attractive and easy to eat (See Table 2)  | Educational materials                          |
| <b>Strategies to use the BB produce</b>                                 | High volume recipes, Make a plan (See Table 2)  | Educational materials                          |
| <b>RQ 2: How are children responding to the Brighter Bites program?</b> |   |  |
| <b>Curiosity</b>  | <i>They see a table with some type of fruits and vegetables and they are curious and asking us what it is. To some kids, it might look disgusting, but then you have some that are willing to try it. When it's good, the other kids come and give it a try, too.</i> | Child engagement                               |
| <b>Having fun helping</b>   | <i>My daughter loves helping me make an inventory of the fruits and vegetables, and telling me what we are going to cook during the week.</i>   | Educational materials / child engagement       |
| <b>Other themes</b>   |   |  |
| <b>Produce quality</b>  | One parent commented that sometimes there was produce that was not usable or products that went bad very quickly.   | Quality control                                |
| <b>BB distribution process</b>  | <i>We start unloading and assembling from 10:30 am to about 1pm; and finish distribution and clean-up about 4pm. What an impact it makes on our school and our community. For some families, it is the difference between not having any and having some.</i>         | Parent / volunteer engagement                  |



**Table 2: Themes and sub-themes on how BB impacts cooking behaviors**

| Theme  | Sub-theme                          | Participant Comments   |
|--|------------------------------------|--|
| <b>Strategies to get kids to eat fruits and vegetables</b> | Healthy swaps                      | Participant noted that she now makes a drink from the lemons she received instead of buying packaged, sugary lemonade.   |
|  | Add to traditional dishes          | <i>If they see something in there they already like, they are more likely to give it a try.</i>  |
|  | Make it attractive and easy to eat | <i>Slicing fruit makes it easy for my daughter to eat a health snack.</i>  |
| <b>Strategies to use the BB produce</b>                    | High volume recipes                | Participants mentioned making big batches of recipes that use all of one item such as cabbage salad or apple cobbler.  |
|  | Make a plan                        | <i>When I get the Brighter Bites bags, I first take an inventory of everything I have: What did I get and how much? Then, I make a plan for the week and do all the prep work.</i> |

### **RQ1: How has Brighter Bites impacted my family's lifestyle?**

#### Theme 1: Impact on family's food budget

The participants remarked that having the Brighter Bites produce weekly reduced the amount of grocery shopping they needed to do. One participant noted how she tends to grocery shop based on her husband's bi-monthly pay schedule and did not have enough money to keep fresh fruits and vegetables in the house consistently throughout the month. Addressing the issue of food security, one participant noted how for some families in the community, Brighter Bites makes a significant impact on their ability to have enough food.

#### Theme 2: Exposure to unknown fruits and vegetables

Participants spoke about how Brighter Bites has brought many previously unknown foods into their kitchens. Several participants said that when they receive novel fruits or vegetables, they searched online for tips and recipes or posted photos of the produce to social media to try elicit ideas from friends. Persimmons and pomegranates were discussed as two such examples of previously unknown fruits.

#### Theme 3: Socializing with other Brighter Bites parents

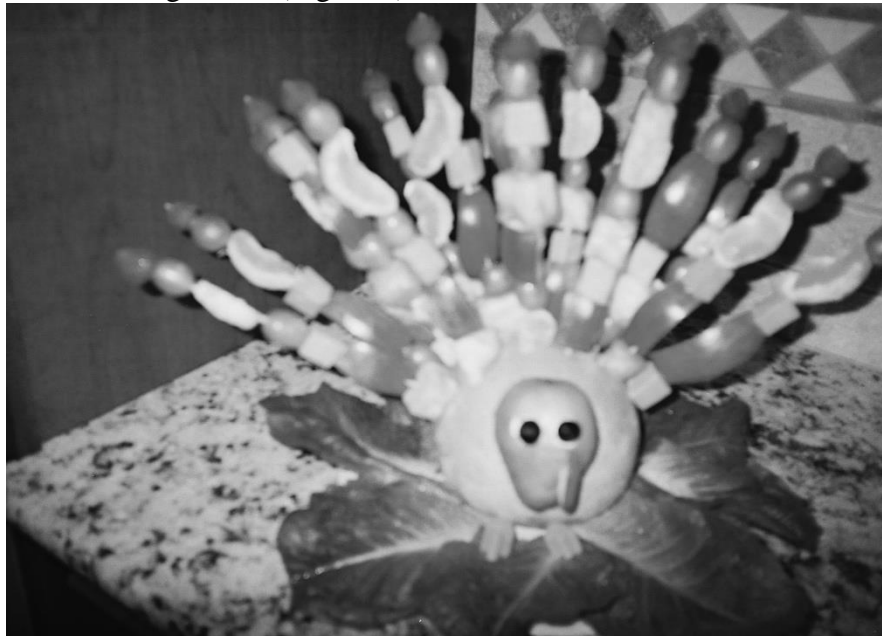
All participants also volunteered during Brighter Bites distributions and spoke about how the distribution setting allowed them to socialize with other parents. Participants noted volunteering is a time when parents talk to each other about the produce they receive and what they did with last week's fruits and vegetables. This tended to spark conversations and idea sharing. The participants also commented on how the distributions were a lot of work, but also very enjoyable. One participant recalled how a few of them got together in their own time to make a special snack for the other volunteers that came to help at the end of one season.

#### Theme 4: Strategies to get children eating fruits and vegetables

Many participants took photos of the foods they made with the Brighter Bites produce, which generated a conversation about how the program has impacted their food preparation and cooking practices. The group broke this theme up into smaller subthemes that outlined the key strategies they use to get their children eating fruits and vegetables (Table 2). One strategy is “healthy swaps”; this refers to the swapping of one food for a healthier alternative. For example, one parent showed a photo of her daughter eating fruit in her car seat. She noted that before the Brighter Bites program, she would keep chips and juice for her daughter, now she gave her sliced fruit and water instead. When asked why she switched to water, the participant responded that juice plus sliced fruit was too much sugar. Another parent noted that she no longer purchases pink lemonade, but makes a fresh lemon “detox” drink with the lemons she receives from Brighter Bites.

Another strategy parents used to entice their children to eat more fruits and vegetables included “adding to traditional dishes”. Parents commented on how they add fruit and vegetables to foods their children currently eat. This was agreed upon as an effective strategy for getting children to at least try new produce. This strategy was implemented in a few ways. In some cases, parents added more or different vegetables to foods that already included some basic vegetables such as potatoes. For example, two participants noted adding squash and cabbage to traditional soups that only used potatoes and carrots in the original recipe. Another method mentioned was replacing starchy side dishes such as rice with vegetables. A few participants noted that they added fruits and vegetables to foods they knew were “less healthy” to get more picky children to try them. One woman spoke about making apple cobbler, which she had never made before. Knowing her children were unlikely to try it on its own, she added vanilla ice cream, with which the children were already familiar. Another noted adding vegetables to a rice and hot dog dish to encourage her daughter to try the novel produce.

The final strategy the parents mentioned using to get children to eat fruits and vegetables was to cut or arrange it in an attractive way. One mother noted that her daughter was much more likely to eat fruit if it was nicely sliced. The parents noted making a turkey out of fruit for the other volunteers one day to show them how shapes and colors can encourage children to try new fruits and vegetables (Figure 1).





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Figure 1. Fruit and vegetable turkey. Parent volunteers at the local school made a turkey out of cantaloupe, carrots, lettuce leaves, apples, oranges, tomatoes, grapes, raspberries and a pear to celebrate the end of the first produce distribution session just before Thanksgiving.

### Theme 5: *Strategies to use the Brighter Bites produce*

Using all the produce effectively was an issue that came up in the discussion and led to the emergence of two subthemes (Table 2). Participants all commented on how they “make a plan” when they receive their bags. While all the parents had slight variations on the ritual, most talked about coming home after the distribution and unloading their bags, then doing some type of inventory of what they received (Figure 2). Several participants planned menus for the week in advance to make sure to use all the produce. Another strategy for using up the Brighter Bites produce was making “high volume recipes”. These are recipes that use up a large amount of one particular fruit or vegetable. One parent noted how she tends to make batches of this type of recipe all at once, as the cooked dish could be eaten throughout the week and the produce was seemingly preserved longer than if it had been left raw. Cabbage salad, roasted potatoes, yam soup, persimmon bars, and apple cobbler were all mentioned as high volume recipes that used up a large amount of the produce at one time. This strategy was also considered a time-saver by several participants.



Figure 2. Contents of Brighter Bites produce bags. Parents noted bringing bags home, emptying them completely and doing an inventory of the new items to help plan for the week.

## **RQ2: How are children responding to the Brighter Bites Program?**

### Theme 6: *Curiosity*

All participants spoke about how their children responded to the program with curiosity. One parent showed a set of photos of a toddler reaching into a Brighter Bites bag that had been set on the floor, taking out various vegetables and putting them in her mouth. She noted that the smaller kids are curious about the new vegetables and she encouraged the little girl to explore for herself. Another parent noted how amused her daughter was at the large size and strange shape of a sweet potato they received one week. Beyond children at home, the other school children were also curious about Brighter Bites. During distributions, samples of a produce-based recipe were given to parents, students and teachers as they picked up their bags for the week. The parents took several photos of children reaching for samples and noted that they were often willing to try even unknown foods.

Theme 7: *Having fun helping*

Many images of children engaging in the Brighter Bites process were discussed during the group session. The participants spoke about how much fun their children seemed to be having carrying the bags, unpacking the produce, helping decide what to cook for the week, and helping in the kitchen. One photo depicted a young boy in his Saturday pajamas washing fruits and another showed a girl preparing vegetables for a soup. The parents noted how Brighter Bites had created an outlet for their children to get more involved with household responsibilities.

**Other Themes:**

Theme 8: *Produce quality*

The photos of raw Brighter Bites produce showed a range of quality from very good to damaged. Parents agreed that the size and taste of some of the Brighter Bites produce, such as lettuce and peppers, was higher quality even than that of the large grocery stores. However, several participants also documented rotten or damaged fruits and vegetables they received. This quality issue was shown in both the produce from bags as well as rotten produce being sorted out during the distribution process.

Theme 9: *Brighter Bites distribution process*

Several parents took pictures of the distribution process which includes the arrival and unloading of the food bank truck, the organization of the produce on tables, bagging the produce (at this particular school over 300 sets of bags were made each week) (Figure 3), cleaning up and finally checking in parents during pick up. The parents noted how it was a long and sometimes difficult process but also fun and enjoyable. One parent remarked that she takes time away from her own household chores to volunteer because she likes the program and wants to contribute to the school community.



Figure 3. Prepared bags ready for pick up. After about 3 hours of work, the school gym is filled with sets of bags containing 30 lbs. of produce for the week. Parents will come pick up these bags during an allotted time slot.

#### Community Event

At the end of the project, The Photovoice event was held at a community center located very close to the school site. The event served as a way to disseminate the results of the project to the community with input from the participants. Participants names remained anonymous but they had the opportunity to share their experience with attendees if they wished. Each participant selected two photos, which were displayed with their captions. Photos from the event can be viewed online at [www.brighterbites.org/photovoice-exhibition](http://www.brighterbites.org/photovoice-exhibition). Legislators, school and district administrators, Brighter Bites leadership and the entire school community were invited to the event through flyers, emails and letters and over 30 people attended. Photovoice participants helped decide the day, time, location and agenda for the showing of their photographs. The event was held on a Friday evening and catered by a local restaurant. One participant spoke about the Photovoice experience for the group, highlighting several of the main themes. A local elected official and leadership from Brighter Bites spoke as well. Comments were elicited from attendees on the project as a whole. Leadership and parents from the school site where the Photovoice study was conducted presented the Brighter Bites team with a set of hand written notes, expressing gratitude for the program. Many of the comments received echoed the themes discussed by the group, including how children were enjoying the program and the positive impact Brighter Bites had made on food budgets and healthy lifestyles:

*Our children are fascinated with all the fruits and vegetables available at home. It's a blessing to have this program along with all the volunteers that make this program a success*

*Brighter Bites has change our life by helping us save a little more money when we grocery shopping all the fruits and vegetables. I even help my neighbor because it's a lot of food.*

*Brighter Bites has helped put food on my family's table. My kids eat healthier.*

### Photovoice Process Evaluation Results

The Photovoice study illuminated several key issues for understanding how the Brighter Bites program is impacting local families. Although the participants were enthusiastic about the program, the photos and discussion groups revealed five potential areas for improvement. These improvement areas include a) the development of more relevant educational materials to complement the produce delivery, b) social network support for parents, c) child and parent engagement, d) volunteer engagement during distributions, and e) quality control. Further, the community event and public display of the program supported efforts to continue Brighter Bites by raising awareness of the program and its impact.

Currently, Brighter Bites provides nutrition education materials to participant parents that include easy recipes as well as healthy eating, food preparation, storage and cooking tips. The comments parents gave regarding how they research unknown produce suggests that Brighter Bites should offer recipes and educational materials online and through social media, particularly with regard to lesser known produce such as persimmons. The menu planning aspect that participants discussed could also be supported through educational materials that offer tips for pre-prepping produce and organizing meals for the week. Executing family meals has been associated with improved dietary intake in children through increased fruit and vegetable intake and reduced soft drink intake (Woodruff & Hanning, 2008).

The cooking strategies parents used to get children to eat the fruits and vegetables and to ensure all the produce was used on a weekly basis can help inform new content for the Brighter Bites website including more recipes that use a high volume of a single vegetable or fruit. Further, traditional recipes can also be modified to include more fruits and vegetables. The way children have shown engagement in Brighter Bites through helping at home could support the development of materials outlining how children can help clean and prepare produce. Child engagement in the food preparation process has been associated with increased fruit and vegetable preferences and higher self-efficacy with regard to choosing and eating healthier foods (Chu et al., 2013).

The social network building mentioned by participants generated another potential target for future Brighter Bites programming. As parents appear to rely on each other for ideas and tips, supporting these social networks in all schools should become a priority of the Brighter Bites program. Expansion of Brighter Bites' web presence is already underway, with the recent development of a bi-lingual web page, Facebook page, Twitter account and Instagram account. Innovative ways to connect parents through these platforms are being explored. Empowerment theory, which informs the Photovoice method, includes the development of social capital networks as an avenue for generating change (Israel, Checkoway, Schulz, & Zimmerman, 1994) and social support development has been successfully implemented in community-based childhood obesity prevention studies (Davison, Jurkowski, Li, Kranz, & Lawson, 2013).

Variability in child, parent and volunteer engagement has been an ongoing issue for the Brighter Bites program. Parent volunteers are pivotal to the success of the program as the program relies on a co-op concept to engage families. Further, there is not enough program staff to execute all of the distributions without help. Several parents mentioned how the volunteering was enjoyable, but competed with other duties and could be a long process. Program coordinators could find ways to allow parents to volunteer in shorter time-slots, to allow those



with home duties to participate. Further, offering volunteer shifts in other areas of Brighter Bites outside of normal work hours may help engage working parents that still want to be a part of the program. Arrangements for off-hours volunteering are currently being considered. Child and parent engagement remain important for Brighter Bites and more hands-on activities such as participatory cooking classes are being developed to increase participant interest in the program. Parent involvement has been linked to overall student achievement (Jeynes, 2005) and some evidence suggests parent involvement in school-based programs improves child dietary patterns (Hingle, O'Connor, Dave, & Baranowski, 2010).

Quality control with regard to the produce offered to families is important for program acceptability in the populations served. The quality issues discussed by participants highlight the need for Brighter Bites staff to work closely with the supplying food bank to ensure high quality produce is being sent to schools. If produce of lower quality arrives at a school for distribution, much of it will need to be sifted out, which takes time and, although the program purposefully sends extra produce to account for wastage, it can appear to volunteers that it reduces the total amount of produce each family receives.

## DISCUSSION

The Brighter Bites Photovoice project allowed program researchers to work collectively with participants to better understand their initial reactions to the program. The resulting photos and discussions revealed several themes that functioned both to identify the program strengths, as well as highlight potential areas for improvement. Five improvement areas were identified and several improvements have already been made to the ongoing Brighter Bites program.

This project has a few limitations. The sample was small, limited to English, at a single site and was a convenience sample, so parents who participated may have been more motivated than those who did not. However, other Photovoice studies reported success with a similar number of participants (Thomas & Irwin, 2013). Participation was restricted to English-speaking parents due to limited bilingual staff time. Further, bilingual staff noted that combining Spanish- and English-speaking groups could be disruptive, based on their experience translating dual-language focus groups. Although the generalizability of the results may be limited, the participants did note problem areas with the program, such as variable quality in produce, suggesting they were somewhat objective in their opinions.

Scheduling was difficult to arrange with all of the parents' responsibilities, causing one participant not to complete the study. While point and shoot film cameras were originally given to participants, many were not familiar with this older technology and several photos were blurry or unusable. Several parents ended up using their own digital cameras or phones to supplement the process. The most representative photos, as opposed to those of the highest quality, should ideally be discussed, although the researchers found some parents chose not to share the photographs they felt were too low quality.

Despite these limitations, Photovoice offered a richness of data that was not seen in previous focus groups that did not include documentary photography. The participants seemed motivated and engaged during the discussion, with all participants contributing fully. The discussion and photographic data generated by Photovoice offers insight into a much deeper layer of experience that goes beyond but also complements other program evaluation tools such as self-report surveys. As opposed to the more common process evaluation surveys, Photovoice uses a participatory process that engages the end-users of the program directly (i.e. research question design, data analysis), leading to participant empowerment in the research process and

the opportunity for strategic planning from a community standpoint. This is especially important for a program like Brighter Bites, which focuses efforts on low-income, minority populations. A better understanding of the participant point-of-view will allow Brighter Bites to better align the program goals with the goals of the diverse communities it serves.

Future Photovoice studies should be undertaken in diverse communities at non-school sites, such as Head Starts and community centers where Brighter Bites is currently implemented. Further, Photovoice could be used to document differences in food environments when participants are receiving Brighter Bites, and when the distribution season is no longer in session. These future projects are currently in the planning process.

## CONCLUSION

The parents in this study developed research questions, took documentary photographs, and participated in-group discussions to evaluate the ongoing Brighter Bites project. Several themes emerged from the project that informed researchers of possible target areas for future program developments and quality improvements. The overwhelmingly positive nature of most photos and comments suggested the program is being accepted in this community and having a positive impact on local families with regard to food access, food security and eating behaviors. Participatory research such as Photovoice offers rich information to Brighter Bites coordinators and researchers to ensure programming is effective and relevant as it expands to new communities.

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