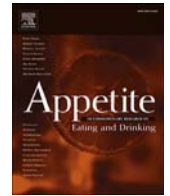


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Examining the impact of a school-based fruit and vegetable co-op in the Hispanic community through documentary photography



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ABSTRACT

Hispanic families are at elevated risk for certain diet related illnesses including obesity and diabetes. Brighter Bites is a 16-week school-based program that delivers produce and nutrition education to high-need areas. The purpose of this study was to explore the adoption of Brighter Bites healthy eating strategies in low-income Spanish-speaking families as well as barriers to the sustainability of improved dietary behaviors using Photovoice. Two researchers worked with a predominately Hispanic, low-income public school to conduct the project. Spanish speaking parents participating in Brighter Bites were recruited and five mothers completed the study. Participants developed research questions, took documentary photos, attended group analysis sessions, and organized a community event. Photos from participants were gathered at two time points: i) during the Brighter Bites produce distributions, and ii) when the distributions were no longer in session. Participants organized resulting photos into themes during discussion groups that proceeded each photo-taking period. Themes that emerged during the produce distribution period included: cost savings, increased variety and accessibility of fresh produce, and ability to practice healthy eating. Themes that emerged when the weekly produce distributions were no longer in session included: increased costs, lack of variety, the continued effect of Brighter Bites, and innovative ways to cook with produce. Overall, participants were enthusiastic about the benefits they experienced with the program, but noted hardships in accessing nutritious food without the produce distributions in session. Innovative approaches are needed to create sustainable pathways to healthful food access after community nutrition interventions are complete.

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1. Introduction

The Hispanic ethnic group currently makes up over 17% of the population of the United States (US) and is projected to comprise 28% of the US population by 2060 (Colby & Ortman, 2015). Hispanics have disproportionately higher rates of obesity with 78% of Hispanic adults classified as overweight or obese compared to 67% of White adults. These disparities are mirrored in rates of type 2 diabetes, with disease prevalence rates of 11% for Hispanic adults as compared to 7% for non-Hispanic Whites (Chow, Foster, Gonzalez, & McIver, 2012). Hispanic children aged 2–19 are also

disproportionately affected with 38.5% overweight or obese compared to 28.5% of their White counterparts (Levi, Segal, Laurent, & Rayburn, 2014).

Because obesity in childhood is associated with a number of comorbidities and is likely to track into adulthood, the development of preventive efforts is priority (Daniels, 2006; Cunningham et al., 2014). One strategy to reverse childhood obesity is through the implementation of primary prevention programs early in life. School-based programs targeting healthy nutrition have the potential to impact students, engage parents, create positive school food policies and impact the wider community. High quality, multi-component interventions have been developed over the last few decades (Chomitz et al., 2010; Hollar et al., 2010). Only a few school-based energy balance interventions targeting Hispanic children have shown improvements in their dietary habits, with most

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interventions failing to show long-term impact in the Hispanic community (Amini, Djazayeri, Majdzadeh, Taghdisi, & Jazayeri, 2015; Holub et al., 2014).

Brighter Bites is a 16-week school-based program that provides families with a weekly distribution of fresh produce, recipe tastings, and nutrition education to improve dietary habits among participating families. Brighter Bites has been shown to have positive effects on the home nutrition environment and intake of fruits and vegetables in predominantly Hispanic low-income children and their parents (S. V. Sharma et al., 2016). The current Photovoice research was conducted as part of Brighter Bites process evaluation efforts to obtain further insight into how Brighter Bites strategies were adopted within the participating families. Qualitative data can help further explain the quantitative findings and provide insight for future program strategies and delivery improvement. Furthermore, by assessing the food environment of participating families after the Brighter Bites season ends, this study provides information on the sustainability of improved dietary behaviors that have resulted as part of the program.

Photovoice is a community based participatory research method (CBPR) that uses documentary photography to explore and advocate for community issues (Hergenrather, Rhodes, Cowan, Bardhoshi, & Pula, 2009; Wang & Burris, 1997). Photovoice has been used to empower marginalized communities with language, cultural and ethnic barriers to have a voice through photographs (Wang & Burris, 1997). This study utilized participatory research methods by engaging participants in research question development, analysis and dissemination of the findings. The results of this project provide valuable insight into the perceived effect of Brighter Bites on participating families. The primary aim of this study was to explore the impact of the Brighter Bites program from the perspective of low-income Spanish speaking families using Photovoice.

2. Methods

2.1. Brighter Bites intervention

Brighter Bites is a 16-week school-based food co-op program that aims to increase access to fresh produce among low-income families in Texas. The program has been described in detail elsewhere (S. Sharma et al., 2015; S. V. Sharma et al., 2016) and has been shown to improve dietary habits of both children and parents. Briefly, there are three key components of the Brighter Bites program: 1) Weekly distribution of 30–35 pounds (approximately 50–60 servings per family) of primary donated fruits and vegetables, 2) Nutrition education including bilingual (English/Spanish) parent nutrition handbooks, recipe cards and tip sheets, as well as implementation of the Coordinated Approach to Child Health (CATCH), an evidence-based health program (Hoelscher et al., 2010), in participating schools and 3) Fun food experience consisting of weekly healthy recipe demonstrations conducted by Brighter Bites staff using the produce provided. CATCH uses a train-the-trainer model where schools are trained in implementation of the program components. Brighter Bites is free of charge for participants and schools. All parents who have children attending one of the participating schools are eligible to enroll in Brighter Bites through the school liaison or with a Brighter Bites staff member during distribution. Parents may enroll at the beginning or throughout the Brighter Bites season, but do not pay any fees for participating in the program.

Brighter Bites operates in schools with over 90% of children on the free/reduced National School Lunch Program, a measure of

economic disadvantage. Local food banks procure and deliver the seasonal produce to participating schools, where it is unloaded, bagged and distributed by parent and community volunteers using a food co-op concept. Brighter Bites staff and parent volunteers oversee the food distribution, and conduct recipe demonstrations.

2.2. Setting and participants

For this study, two trained project staff worked with one predominantly Hispanic public school to conduct the Photovoice project in the summer of 2015. During this period, this school enrolled 213 families in Brighter Bites. Documentary photographs from Hispanic parent participants were gathered at two time points: i) during the Brighter Bites produce distribution and ii) after the produce distribution had ended for the season (8 weeks). The school was selected due to its large Hispanic population (90%) and an established relationship with the program. All Spanish-speaking families participating in Brighter Bites at the school were invited to join the study. Parents were contacted in person during a Brighter Bites distribution and over the phone by study staff. Inclusion criteria were: i) being the parent of a child enrolled in Brighter Bites, ii) the ability to speak and read in Spanish, and iii) the ability to attend all discussion sessions. Final participants represent a convenience sample of parents, as only those willing and available to produce and share documentary photographs joined the study (Palinkas et al., 2015). A minimum recruitment target of five participants was set, as similar studies have used a comparable sample size (Kim, Yi, Sang, Kim, & Heo, 2016; Thomas & Irwin, 2013).

Both Photovoice discussion sessions were conducted in Spanish by a bilingual researcher while hand written notes were taken by a note-taker. All participants provided a signed, written informed consent and media release form. Parents also completed media releases for any photos of their children taken. Participants were provided a \$35 gift card to a local retail store in appreciation of their time. This study was approved by the University of Texas Health Science Center Institutional Review Board: HSC-SPH-12-0480.

2.3. Photovoice sessions

The Brighter Bites Photovoice project consisted of several steps (Fig. 1). Participants first gathered for an introductory session, which detailed the general purpose of the study, a review of the Photovoice method, and ethical considerations when taking pictures. The technique of Photovoice employs a CBPR approach starting with engaging community members in developing a research question that is of interest to them (Hergenrather et al., 2009). The facilitator led a brainstorming session in which participants developed ideas for the research questions of the study. The overall goal of the study was left broad, so parents could have the freedom to determine which topics were most important to them. Participants refined their ideas through group discussion and agreed on two final research questions: Q1: ¿Cuáles son los beneficios e impactos que nos ha traído Brighter Bites? (What benefits and impacts have we experienced with Brighter Bites?) Q2: ¿Y cómo podríamos mejorar el programa? (And how can we improve the program?). As the aim of this study was to better understand the impact of Brighter Bites from the participant perspective, having participants determine the research questions themselves was essential to the development and success of the Photovoice project.

Participants were asked to use their cell-phone cameras to document relevant events. One participant, who did not own a cell phone with camera capabilities, received a digital camera along with basic instructions on its use. Each participant was instructed

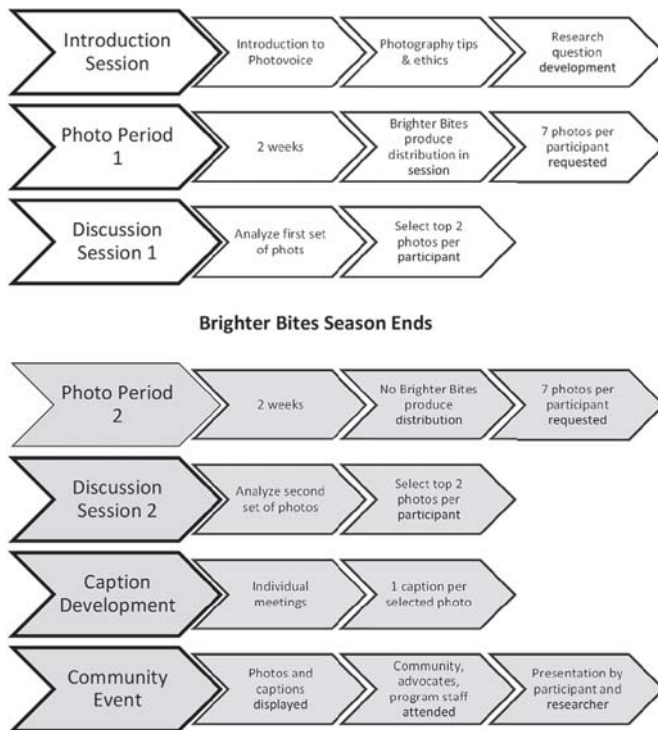


Fig 1. Brighter Bites Photovoice Study Process. Scheme depicting the seven steps of the Photovoice process both during produce distributions (upper half) and after the conclusion of the Brighter Bites season (lower half).

to take at least seven photographs within a two-week Brighter Bites produce distribution period. Research staff were available via email, phone and in person at distributions to address any questions. Participants sent the resulting photographs via email and text message. All digital pictures were printed at a local photo facility. Two sets of photographs were created per participant. One set was used for thematic analysis, and the other was for the participants to keep.

The group reconvened two weeks later for the first discussion session. The session was held in a designated classroom at the school to analyze the first round of photographs and organize them into themes. Photographs were discussed using the SHOWeD technique (Wang & Burris, 1997), which uses the following questions: “What do you see in this picture”, “What is happening in this picture?”, “How does this relate to our lives?”, “Why does this situation, concern, or strength exist?”, and “What can we do about it?”. Participants used this technique to explain the context of their photos. As a group, the participants placed the photos into piles representing different themes. Consensus was reached among the participants and themes were consolidated or split apart as requested by the group. After the initial thematic grouping was complete, participants were each asked to select two of their photos that they felt best represented the identified themes for display at a later community event. As the event was a group endeavor, all participants were free to make comments or suggestions during the selection process. For example, if several participants liked a given photo, they may encourage the photographer to select it for presentation. While such comments were welcome to ensure a good mix of photos for the final showing, the selections were ultimately left up to each individual participant. The facilitator helped to lead discussions and ensure equal input from group

members.

After the last week of the Brighter Bites distribution season, participants were given two weeks to take another seven photographs when Brighter Bites produce distributions would not be occurring. After this period, participants met for a second discussion session. The session was organized in the same way as the first. The second set of photographs were printed and distributed to the participants, analyzed using the SHOWeD method, and organized into themes by participants. Two photographs that highlighted the identified themes were selected.

Individual follow up meetings were scheduled with each participant to generate captions for the photographs they selected during discussion sessions. Chosen photographs were enlarged, professionally printed, and exhibited at a community event. Participants agreed on a convenient date, place and time to display their photographs to the community. The names of all participants remained confidential but they were given the option to share their experience during the event.

3. Results

3.1. Participants

The Photovoice study was conducted in an economically disadvantaged (98% eligible for free and reduced lunch), primarily Hispanic (90%), elementary school in Houston, Texas. Eight Spanish-speaking parents participating in Brighter Bites were recruited and five completed the study. Three participants withdrew: One because she was not comfortable taking personal photographs and two because they could not attend the scheduled discussion meetings. All participants were Hispanic women who participated in the Brighter Bites program at the school during the summer of 2015.

3.2. Thematic analysis

Participants developed two research questions (Q1 and Q2) that were used to guide the study: Q1: ¿Cuáles son los beneficios e impactos que nos ha traído Brighter Bites? (What benefits and impacts have we experienced with Brighter Bites?) Q2: ¿Y cómo podríamos mejorar el programa? (And how can we improve the program?).

Several themes emerged during the first group discussion session, in which participants reviewed photos taken while Brighter Bites produce distribution was active (PV1). The resulting themes were combined into four major themes described in detail below. During the second discussion session, participants reviewed photos taken while Brighter Bites produce distributions were inactive (PV2). These were also represented by four major themes (Table 1).

3.3. Photovoice with Brighter Bites produce distribution (PV1)

Theme 1: Cost savings and ability to practice healthy eating

All participants in this study agreed that Brighter Bites has made a significant impact in their household budget and their ability to eat a healthy balanced diet (Fig. 2 Left). During the first discussion session, one mother mentioned that the weekly fruits and vegetables received as part of Brighter Bites have become the main source of food in her pantry.

Theme 2: Increased variety of fruits and vegetables at home

Table 1

Comparison of major emerging themes and relevant quotes from Photovoice 1 (PV1) and Photovoice 2 (PV2).

PV 1		PV 2	
Theme	Quote	Theme	Quote
Cost Savings	<i>With Brighter Bites not only I save on my budget, but I also enjoy the variety of fruits and vegetables with everyone in my family.</i>	Increased costs associated with healthy eating	<i>Brighter Bites is a huge support for my budget as it helps me save around \$140 a month. Although the cost of fruits and vegetables is high, as a single mother it is hard but I try to maintain a healthy diet based on what Brighter Bites has taught me.</i>
Increased variety of fruits and vegetables at home	<i>Colorful dining options appeal to the appetite of my family. When preparing this carrot cabbage, radish and cucumber salad I use the vegetables that Brighter Bites gave me, and add lime and salt to please everyone's taste in my family.</i>	Lack of fruit and vegetable variety at home	<i>Keeping a variety of fruits and vegetables at home is a big challenge, considering how easy and practical it is to eat for a \$1 and few cents, instead of preparing something healthy for your family</i>
Increased accessibility to fruits and vegetables	<i>Plums, grapes, or any other fruit is always a healthy snack that provides our children with colorful options within their reach.</i>	The Brighter Bites effect continues	<i>Even though we live in a country with an abundance of fast food, it is very important for me that my children realize they can make an effort to eat healthy. When my son decides to eat a 100% natural fruit instead of junk food, shows me that the healthy habits I practice in our diet transcend the decisions he makes in his nutrition. As shown in the picture, I am very happy to see that thanks to Brighter Bites, my children implement their advice and follow my example to eat healthy and nutritious.</i>
Implementation of Brighter Bites acquired knowledge at home	<i>Thanks to Brighter Bites I've been able to introduce new options in my kitchen. This way, my family and I are educating ourselves and opting for healthier, fresh, and nutritious food.</i>	Innovation of healthier cooking styles	<i>With Brighter Bites, I learned to combine sprouts and vegetables in the meals I cook for my family. I implemented these teachings by combining vegetables with soy pancakes that I learned to cook in my country.</i>



Fig. 2. Left: “With Brighter Bites not only I save on my budget, but I also enjoy the variety of fruits and vegetables with everyone in my family.” Right: The participant mentioned that Brighter Bites supplied her refrigerator with a colorful variety of fruits and vegetables.

Theme 3: Increased accessibility to fruits and vegetables at home

Participants remarked that Brighter Bites provides a wide variety of fresh produce, allowing their family to explore novel fruits and vegetables. One participant mentioned that Brighter Bites supplies her refrigerator with a colorful variety of fruits and vegetables (Fig. 2 Right). Parents mentioned how Brighter Bites pushed them out of their comfort zone and gave them enough confidence to try unfamiliar vegetables. One mother noted that her family is now eating cucumber, a vegetable they had never purchased before. Another parent commented that she perceives the variety of fruits and vegetables in the bags as tools to implement healthy eating habits at home.

Participants remarked that Brighter Bites increased their access to fruits and vegetables and spoke about the impact this has made on their family. One mother noted that by increasing the access to fresh produce at home, she prevents her family from eating unhealthy options elsewhere. As a strategy to increase their fresh produce consumption, right after dinner she peels and serves tangerines for her family to have as dessert. Another parent commented that her young children now eat more fruits and vegetables just by having them ready to eat and within easy reach (Fig. 3 Left).

Theme 4: Implementation of Brighter Bites-acquired knowledge at home: eating more fruits and vegetables

Participants photographed several meals they prepared with the weekly fruits and vegetables received from Brighter Bites. One mother noted that her son includes more vegetables in his diet, by adding cucumber in his sandwich (Fig. 3 Right). Another mother mentioned that her family is more likely to eat fruits and vegetables when they are plated in a visually attractive way, such as in a colorful salad. Parents spoke about introducing their family to novel vegetables by incorporating them into already known dishes. One mother mentioned she entices her family to try green beans by frying them with queso fresco.

Participants perceived liquid refreshments made from fruits and vegetables as a healthier alternative to sugar sweetened beverages (SSB). Participants prepared liquid refreshments with fruits and vegetables to utilize their weekly produce and introduce their family to novel foods. One participant noted using cherries to prepare a “cherry water”, while another mentioned using eggplant skin to prepare an eggplant tea. One mother described her strategy to convince her family to try apricots, by blending them into an apricot water, and another mother mentioned using cucumber to prepare a cucumber-lime water with sugar.



Fig. 3. Left: The participant remarked that by serving sliced fruit on the table her daughter is enticed to eat and explore the shapes and color of the fruit. **Right:** “Brighter Bites has given me the opportunity to allow my children explore on their own the variety of nutritious foods. I am very proud that my son is making smarter decisions that will help him for the rest of his life.”

3.4. Photovoice without Brighter Bites produce distributions

The following themes emerged from the photographs that were taken during the next two weeks after the Brighter Bites produce distribution ended for the summer season.

Theme 1: *Increased costs associated with healthy eating when Brighter Bites season ends*

Participants remarked on the increased costs associated with purchasing fruits and vegetables at the grocery store. One mother commented about how the cost of cilantro is more than \$1 per bunch (Fig. 4 Left). Participants noted that for some families, the cost of fresh produce at the grocery store prevents them from practicing healthy eating habits. Despite the high cost of fresh produce, participants acknowledged the benefits of consuming fruits and vegetables and noted that they make an effort to purchase them when there is no Brighter Bites distribution. In addition,



Fig. 4. Left: “Eating healthy is necessary and should not be optional, even when paying \$1 to feed yourself may seem better than paying \$5 to eat healthy.” **Right:** “Keeping a variety of fruits and vegetables at home is a big challenge, considering how easy and practical it is to eat for a \$1 and few cents, instead of preparing something healthy for your family.”

one mother remarked that she feels motivated to continue eating healthful foods without because she perceives that it is more expensive to become ill and go to the doctor than to purchase fresh produce at the grocery store.

Theme 2: Lack of variety in fruits and vegetables in the home once Brighter Bites season ends

Theme 3: The Brighter Bites 'effect' continued at home

After the Brighter Bites distribution season ended, participants revealed that they experience a lack of variety in fruits and vegetables at home, although they did not elaborate as to whether it was because of lack of access, knowledge, or interest. Participants mentioned that their pantry did not look as full and colorful as when they received their weekly produce from Brighter Bites. One participant remarked that it is challenging to maintain a variety of fruits and vegetables at home and continue cooking healthy meals for their family (Fig. 4 Right). Participants noted that during this time, most of the fruits and vegetables in their pantry were from the last Brighter Bites distribution weeks before.

Participants mentioned that Brighter Bites contributes to their healthy eating habits and shared some of the strategies they use to continue practicing these behaviors after the produce distribution season ends. Participants talked about preparing healthy refreshments with fruits and vegetables for their family. One mother spoke about the homemade lemonade that she makes as an alternative to sugar-sweetened beverages and to motivate her family to drink more water. Participants also noted that children continue practicing healthy eating habits on their own. One mother in particular spoke about how proud she was to see her son

repeatedly asking to get fresh produce at the grocery store (Fig. 5 Left).

Theme 4: The innovation of healthier cooking styles

Participants mentioned they were innovative in their cooking style using the produce they could afford to continue practicing the healthy eating habits they learned with Brighter Bites (Fig. 5 Right). This triggered a conversation among parents as they shared some of the recipes they prepared when they were not receiving produce from Brighter Bites. One mother mentioned that with Brighter Bites she learned to incorporate vegetables into recipes that she learned in her home country. During the off season of Brighter Bites, she continued adding vegetables into soy sprout patties. Another participant commented she added grated carrots to the rice and beans she prepares at home in an effort to add more vegetables into her family's diet.

3.5. Community event

Once the Photovoice discussion sessions and caption development meetings were concluded, an event took place in October 2015 at a community center next to the school. The purpose of the event was to present the community with the results of the Photovoice project. A local restaurant was hired to cater the event. Legislators, school and district administrators, Brighter Bites leadership, and the school community were invited to attend. Over 20 people attended the event. Captions and speeches were offered in English and Spanish. Leadership from Brighter Bites spoke during the event and one study participant shared her experience with the attendees.



Fig. 5. Left: "Even though we live in a country with an abundance of fast food, it is very important for me that my children realize they can make an effort to eat healthy. When my son decides to eat a 100% natural fruit instead of junk food, shows me that the healthy habits I practice in our diet transcend the decisions he makes in his nutrition. As shown in the picture, I am very happy to see that thanks to Brighter Bites, my children implement their advice and follow my example to eat healthy and nutritious." **Right:** One participant mentioned that with Brighter Bites she learned to add more vegetables to her "chow mein" like dish and her family enjoyed it. Without Brighter Bites, she continues to make an effort to add more colorful vegetables to her dish.

4. Discussion

This study used Photovoice to illustrate the successes and challenges that a sample of low-income Spanish speaking families experience during and after the 16-week Brighter Bites produce distribution program. The results of this process evaluation demonstrate the feasibility of Photovoice as a method to document practices from low-income Spanish speaking families during and after the program, and acceptability of program components among participants. Study participants noted cost savings, increased variety, increased access and more healthy home behaviors during the program. After the 16-week program ended, themes of increasing food costs and lack of variety were highlighted. Participant also mentioned a continued impact of Brighter Bites nutrition education through the development of innovative cooking styles to improve healthfulness of meals. These results support and help explain the improvements in dietary habits and home nutrition environment observed in the two-year quasi-experimental study conducted for the program (S. V. Sharma et al., 2016).

The photos of prepared meals during the produce distribution demonstrate a variety of cooking approaches, healthy and unhealthy, including fruit-based desserts and deep fried vegetables. While some parents utilized skills such as adding vegetables to dishes and pre-slicing fruit to make it more attractive to children, some of the dishes and fruit waters made during the Brighter Bites produce distribution used excessive fats and added sugars. This suggests participants may not fully understand how to use fresh produce in replacement of calorie dense foods or use healthier cooking methods. A gap in healthful food preparation knowledge is an important target for programs that provide direct access to fruits and vegetables. While access to produce is essential, the positive impact of fruit and vegetable intake on energy balance is only seen in conjunction with reduced overall calorie intake and reduced high-calorie food intake (Ledoux, Hingle, & Baranowski, 2011). Healthy cooking is a major nutrition education focus of Brighter Bites and the program may benefit from more hands-on food preparation classes for parents to demonstrate ways to reduce overall caloric intake when preparing meals.

This study also revealed the hardship that some participating families experience after the 16-week period of Brighter Bites is over, due to lack food access and affordability, suggesting economic and food sourcing factors may need to be targeted to promote more impactful change in this community. Cost of produce was an important issue highlighted by participants. During the second Photovoice session (i.e. no Brighter Bites), several participants took photos of grocery store prices. Bunches of cilantro were photographed retailing for over \$1.39 a bunch (Fig. 4 Left). The participant that took this photo noted that she could get 3 tacos from Taco Bell for about the same price. Creating demand for fresh produce is a goal of the Brighter Bites program. By providing families with ~30lbs of primarily donated fresh produce on a weekly basis combined with nutrition education, Brighter Bites allows these families a free trial to practice healthy eating at home with the purpose of increasing preference for these healthy foods. However, that initial demand for fruits and vegetables can only translate into sustainable change in food choices within the confines of one's ability to find and purchase fresh produce, which needs to be considered for sustainability of behavior change. There are few models being implemented and evaluated nationwide to create sustainable and cost-effective access to fruits and vegetables among low-income communities. A few studies have assessed the implementation of mobile fruit and vegetable markets and programs that offer coupons for produce in areas of low access (Olsho et al., 2015; Sadler, 2015). Several programs have also been

implemented in small or “convenience” store settings to increase healthy food options (Gittelsohn, 2012).

Studies that have provided fruit and vegetables directly to participants or through store/farmers market coupons have shown promising results. Seligman et al. focused on low-income individuals with diabetes and offered participants specially prepared “food boxes” including lean meats, whole grains, low sugar fruits and vegetables. The food boxes were developed by study staff and sourced through a local food bank. The study found participants improved HbA1C levels as well as fruit and vegetable intake significantly after the study, but failed to do longer-term follow up with participants to understand future dietary habits (Seligman et al., 2015). Anderson et al. offered nutrition education and \$20 coupons for produce from a local farmers market to low-income mothers. Those that received coupons and education had the largest increase in fruit and vegetable intake and the most improvement in attitudes about fruits and vegetables compared to those that received coupons or education alone (Anderson et al., 2001).

Neighborhood disparities in retail store access represent a challenge to promote healthy eating habits in the Hispanic community (Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007). Research suggests that better access to retail stores with healthful foods translates into healthier eating habits among neighborhood residents (Laraia, Siega-Riz, Kaufman, & Jones, 2004). Collaboration with local grocery stores or farmers' markets to provide coupons during the Brighter Bites off-season may help participants continue healthy eating behaviors; a strategy that may be implemented in future studies.

Qualitative studies have found that food quality is a crucial factor influencing food purchasing decisions among low-income families (French, Story, & Jeffery, 2001; Glanz, Basil, Maibach, Goldberg, & Snyder, 1998; Tsang, Holt, & Azevedo, 2011; Wiig & Smith, 2009; Zenk et al., 2005). In addition to economic and geographic access, food quality (with regard to damage, mold, ripeness etc.) was perceived among low-income families as a potential barrier influencing healthful shopping behaviors (Evans et al., 2015). Brighter Bites employs a stringent quality control process at the local food banks, where the produce is procured, and distributes 8 to 12 different types of quality produce to the families.

The conclusions of this study are limited by the small convenience sample and the use of a single school location, suggesting participating parents may have been more motivated than the average Brighter Bites family. Despite these limitations, the findings contribute to a deeper understanding of the challenges faced by Spanish speaking families during and after the distribution season of Brighter Bites. Although saturation was not assessed, participants offered rich, detailed information about their experience in the program and the smaller group discussions allowed for in-depth discussion of photos and themes. Other studies using Photovoice to assess a nutrition intervention used a similar sample size (Thomas & Irwin, 2013). Additional studies with a larger parent and school sample are needed to be able to generalize these findings across the Hispanic population in Houston. Future research should explore the impact of Brighter Bites in the Hispanic population across different cities where the program operates. More research is needed to develop strategies that help families form sustainable pathways to healthy retail food access to sustain the behavior changes.

Overall, participants were enthusiastic about the benefits they experienced with Brighter Bites. This is consistent with data from the program-wide survey, showing more than 90 percent of participants perceived the program as effective in changing family food habits (unpublished data). Further, a quasi-experimental study of Brighter Bites participants found improved intake of fruits and

vegetables among children (S. V. Sharma et al., 2016). In conclusion, findings from this study provided valuable insight on the acceptability and success of the Brighter Bites program among low-income Spanish speaking families, while also highlighting challenges that families experience once the Brighter Bites program ends for reasons related to food access and affordability.

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