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

Lani Alcazar, MPH a,1, Margaret Raber, MPH a,1, Kimberly Lopez, DrPH b, Christine Markham, PhD a, Shreela Sharma, PhD a*,

a University of Texas Health Science Center Houston, School of Public Health, 1200 Pressler Street, Houston, TX 77030, USA
b Baylor College of Medicine, Public Health Pediatrics, 1102 Bates Avenue, Houston, TX 77030, USA

1 Lani Alcazar and Margaret Raber contributed equally to this manuscript.

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.

© 2017 Published by Elsevier Ltd.

ARTICLE INFO
Article history:
Received 26 September 2016
Received in revised form 18 April 2017
Accepted 22 April 2017
Available online 26 April 2017

Keywords:
Photovoice
Hispanic health
Nutrition
Food access

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 & Orman, 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
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, Bardoshi, & 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...
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 produce distribution period. Research staff were available via email, 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
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 her family is more likely to eat fruits and vegetables when they are plated in a visually attractive way, such as in colorful salad. Parents spoke about introducing their family to novel vegetables by incorporating them into already known dishes. One participant noted using cherries to prepare a cherry-lime water with sugar.

Participants remarked that Brighter Bites provided a wide variety of fresh produce, allowing their family to explore novel fruits and vegetables. One participant mentioned that Brighter Bites supplied her refrigerator with a colorful variety of fruits and vegetables. 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 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 frying them with queso fresco. Another participant 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 apricot water, and another mother mentioned using cucumber to prepare a cucumber-lime water with sugar.

**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 supplied 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).

**Table 1**

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

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

**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.
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,
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 vege-
tables 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 re-
freshments with fruits and vegetables for their family. One mother
spoke about the homemade lemonade that she makes as an alter-
native 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 develop-
ment 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 Pho-
tovoice project. A local restaurant was hired to cater the event.
Legislators, school and district administrators, Brighter Bites lead-
ership, 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 and food sourcing factors may need to be targeted to promote more sustainable and cost-effective access to fruits and vegetables across different cities where the program operates. More research is needed to understand future dietary habits (unpublished data). Further, a quasi-experimental study of Brighter Bites participants found improved intake of fruits and 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 (Larrea, 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.
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.

Acknowledgments

The authors would like to acknowledge the University of Texas System School of Public Health, the UT Michael and Susan Dell Center for Healthy Living and the Houston Food Bank for their support of this project. Authors would also like to thank all schools, families, school staff who participated in Photovoice, Brighter Bites staff as well as the Wesley Community Center. MR is supported by the National Cancer Institute of the National Institutes of Health, staff as well as the Wesley Community Center. MR is supported by the National Cancer Institute of the National Institutes of Health, as well as the Wesley Community Center. MR is supported by the National Cancer Institute of the National Institutes of Health, as well as the Wesley Community Center. MR is supported by the National Cancer Institute of the National Institutes of Health.

References


Gittelsohn, J. (2012). Interventions in small food stores to change the food environment, improve diet, and reduce risk of chronic disease. Preventing Chronic Disease, 9.


