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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 highneed 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, multicomponent 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, Djazayery, 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 trainthe-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 predominately 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

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