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Food in My Neighborhood: Exploring the Food Environment through Photovoice with Urban, African American Youth

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Abstract

This study adapted Photovoice methodology for younger participants to better understand the perceptions of urban African American youth on their food environments and diets. Youth ($n = 17$, ages 10–13 years) photographed and described, using novel narrative-based activities, the myriad places they regularly acquired “junk food” from environments saturated with such but differed in their assessments of the availability and desirability of more nutritious alternative foods. Youth often discussed specific foods as well as peers and adults in their lives as either entirely “healthy” or “unhealthy.” This concrete thinking should be considered when designing messaging strategies to improve diets in similar populations. Overall, Photovoice is an engaging and effective method to engage youth in efforts to improve food environments and diets.

Keywords

Photovoice; food environment; diet; nutrition; youth; urban; African American

Introduction

Obesity is a significant public health concern in the United States, particularly among non-Hispanic black youth, nearly 40% of whom were classified as either overweight or obese in 2011–2012.¹ Along with high obesity rates, youth in Baltimore often fall short of the 2010 *Dietary Guidelines for Americans*, consuming diets that are high in sugary drinks and very

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low in fruits and vegetables.² Overweight and obese youth are more likely to suffer multiple physiological, mental, and social health consequences than their normal-weight counterparts.^{3–5}

Lack of significant interest and engagement by youth is a challenge to implementing needed obesity prevention and dietary improvement programs in adolescent populations.⁶ In particular, this has been a noted gap in engagement in interventions serving Baltimore City youth.^{7–9} One hypothesized reason for this lack of engagement is that youth perceptions of their food environment are not well examined during intervention development, despite evidence that youth perceptions of weight and healthy lifestyle—often the targets of these interventions—are highly influenced by personal and environmental factors.¹⁰

Aspects of the community food environment have been empirically linked with both dietary and weight outcomes.¹¹ For example, increased exposure to convenience stores and fast food restaurants has been associated with higher body mass index and, conversely, supermarket availability is positively associated with healthier food intake and inversely related to body mass index and the risk of chronic disease.^{12–14} However, few studies to date have obtained rich qualitative information exploring low socioeconomic status and urban youth's perceptions of the positive and negative aspects of their food environment. As such, programs developed may not appropriately address environmental influences on diet and weight that are salient to this population.¹⁵

This study aimed to elicit rich visual and narrative descriptions of the Baltimore City community food environment from the perspective of urban youth. Specifically, the aims were to use Photovoice to better understand how youth in Baltimore City perceive their food environment—particularly what they classify as its supportive (healthful) and unsupportive (unhealthful) components—and to rally youth to identify and change aspects of their own food environments to promote health. Supportive neighborhood characteristics are those that promote healthier dietary choices that are affordable and acceptable. Participatory photo elicitation methods have been shown to engage youth in identifying and discussing factors in their food environments that shape their dietary choices.¹⁶ This work was used to inform the development of an ongoing multilevel, community-based obesity prevention intervention trial in Baltimore City: B'more Healthy Communities for Kids.¹⁷ Specific goals were to use narratives and photographs to tailor targeted intervention materials and communicate the importance of a supportive food environment to city policy makers and also to increase youth interest and involvement in the overall change process.

Methods

Photovoice

Photovoice, a research method where participants are asked to take and describe photographs, provides a unique way to engage youth around the topic of their food environment.¹⁸ Photovoice projects generally have 3 goals: to (1) document and reflect the participants' community's needs and concerns through photography; (2) conduct group discussions of photographs to promote critical dialogue and understanding of important

issues; and (3) engage policy makers and other key community stakeholders in community-defined problems through the photographs.^{19–21}

Participants and recruitment

The participant population for the parent study, B'more Healthy Communities for Kids (BHCK), includes 30 predominantly African American neighborhoods with high poverty rates and low food access in East and West Baltimore, Maryland.¹⁷ For this substudy, 2 neighborhoods were selected based on the strength of the relationship with the director and the interest and support for the project expressed by the staff at the local recreation centers, which serve as a community hub for intervention activities in the parent study.

The sessions were conducted as part of the summer camp programming provided by the recreation centers. All camp participants and junior staff between the ages of 10 and 14 were eligible for the program. Participants were recruited with the aid of the recreation center staff, using Institutional Review Board–approved scripts. Parental consent and child assent for participation were obtained from all participants. The study was approved by the Johns Hopkins Bloomberg School of Health Institutional Review Board.

Program design and delivery

The Photovoice program consisted of 4 sessions at each recreation center (Table 1). Each session began with an icebreaker activity, followed by a content component including short photography lessons and guided group discussions. At the first session, youth were provided with a digital camera to use during the Photovoice program and to keep at the end of the program. Prior to each Photovoice session, researchers retrieved cameras from the youth and uploaded and printed the photos to be analyzed (by the research team) and discussed (by the youth participants). In 2 of the 4 sessions, participants chose 2 to 3 of their favorite photographs to discuss. Facilitators led a semistructured discussion informed by both visual thinking strategies and age-appropriate modification of the SHOWED methodology.^{20,22,23} The SHOWED method, developed by Caroline Wang, is a method of structuring Photovoice discussions by posing a series of questions about participants' photographs: (1) What do you *See* here? (2) What is really *Happening*? (3) How does this relate to *Our* lives? (4) *Why* does this problem, condition, or strength exist? (5) What can you do to *Educate* others about the problem, condition, or strength? (6) What can we *Do* about it?²⁴ Additionally, guided by facilitators, participants discussed how their photos related to food availability, diets, and overall health in their communities. Each group discussion was digitally recorded and transcribed verbatim. At the end of each session, youth were provided with a prompt to guide and encourage their picture taking between sessions. In addition, during the third session, youth were allowed to explore and photograph various food sources in their communities such as corner stores, carry-out restaurants, and an urban farm.

Because program participants were younger than those in many other Photovoice programs, several novel interactive and narrative-based activities to engage participants and allow them to interact with the photos creatively were incorporated.²¹ This included a tableau activity, where participants conceptualized and created and staged their own scene to photograph that served as a commentary on an issue related to food, nutrition, or food access. In a

storyboarding activity, small groups of participants were given a series of photos taken by participants. Using the photos to generate content, groups then created a story about a character their age, living in their neighborhood, attempting to eat a healthy diet and acted out scenes from their story for the other groups. Following their presentations, facilitators led a discussion around the themes highlighted in each story that was digitally or video recorded and transcribed verbatim for analysis.

Analysis

Focus group discussion and narrative activities were transcribed verbatim and coded for themes using Atlas.ti analysis software (ATLAS.ti Version 7.0, 2012, Scientific Software Development, Berlin). Team-based qualitative analysis included iterative rounds of structural and in-depth deductive and inductive coding to identify themes as well as use of a priori codes including those relating to food access and constructs based on social cognitive theory.^{25,26} Social cognitive theory provides a theoretical framework to explore the dynamic and reciprocal interactions between personal factors, environmental factors, and health behaviors such as dietary choices.²⁶

Results

Participants

Seventeen youth ages 10–13 participated in the project. Five participants were age 10 years, 7 age 11, 3 age 12, and 2 age 13. Seven boys and one girl participated in West Baltimore and all 9 participants in East Baltimore were girls. All participants were African American, which is representative of the neighborhoods immediately surrounding the recreation centers where most participants lived.

Participant engagement

The youth participants remained engaged in the Photovoice program over the course of the 4 sessions, with no participant dropout over the course of the program and all youth participants attending and actively participating in the majority of the sessions.

Photos

All participants contributed photos that were discussed in the group sessions, although the number of photos taken by each participant varied. Participants took pictures predominantly of foods just prior to eating them, either within their homes or at the recreation center during camp. The exceptions were photographs taken as a part of the group photo hunts in the neighborhoods around the recreation centers during one of the Photovoice sessions. Figure 1 provides an example of youths' photos with additional photos available in the online supplement to this article.

Perceptions of neighborhood food access and environments

Several themes emerged from the group discussions and narrative activities regarding participant's perspectives on their food environments. One 11-year-old female participant

summed the discussion up well, stating: “Food that we want is not always healthy for us and food that we need isn’t always available.”

Participants concurred that it was easy to buy junk food in their food environments and described myriad places they regularly acquired it, including home, corner stores, street vendors, church, and snack stands in community sites, among others. As 2 11-year-old male participants described food they could get in their neighborhoods, they readily listed examples of the prevalent nonnutritious snack and drink options: Participant 1: “All we have is Hot Cheeto bags.” Participant 2: “and big bursts [fruit-flavored sugary drinks].” Participant 1: “Morning heat-up biscuits, big bursts.”

Participants in the West Baltimore group reported difficulty accessing healthful foods, but those in East Baltimore Photovoice group perceived increased ease. Some participants discussed high prices and limited availability and variety near their homes as barriers to eating more healthy foods such as fresh fruits and vegetables. Others described easy access to self-identified “healthier” foods and ready availability, particularly in their homes. Ten- and 11-year-old male participants from West Baltimore discussed factors keeping their family from eating more fresh fruit, Participant 1: “Like watermelons. We have to go all the way out to [remote city suburb] to get that. . . .” Participant 2: “You gotta catch the [bus number].”

Healthy and unhealthy foods, people, and environments

Theme 1: It’s hard to know what foods are healthy—In several group discussions, participants dissected the healthfulness of the food photographed when prompted to discuss how the subject of the photo might affect them. These discussions often featured confusion about what constitutes nutritious food. Often this stemmed a desire to classify foods as either bad or good. Nearly all participants explicitly cited fresh produce or something baked (e.g., baked chicken) as good and things that were greasy (i.e., deep fried or cooked in grease) as bad. However, there was often confusion about how to classify any foods that were not fresh produce or fried. For example, one 11-year-old male participant pointed out: “In fruit snacks there was an orange one, it pro’ly has orange juice in it.” There was particular confusion evaluating the healthfulness of a whole meal versus a single food, foods with multiple components, and foods that are topped with spices or flavorings. For example, 2 youth were discussing the healthfulness of a “hot sauce”—flavored snack cracker: Participant 1: “I would say [these crackers are] in the middle, because hot sauce can give you high cholesterol and [cracker name] is just a cracker but has protein packed in it.” Participant 2: “I think [the cracker]’s healthy because it has wheat in it.”

Theme 2: Others are either healthy eaters or unhealthy eaters—Similar to their classification of food items, participants often sought to classify other people (not themselves) into identities as healthy eaters or unhealthy eaters based on their diet. However, there was often confusion about what kind of diet one must consume to be a healthy eater. In particular, participants expressed that a healthy eater could never or rarely eat anything unhealthy. Characters in the narratives created by the children often fell into these dichotomies. Healthy eaters were portrayed as uncool and were often maternal characters,

whereas unhealthy eaters were more sympathetic characters. Fictional characters intended to be peers were classified as both types of eaters, but their protagonists often seemed to relate more to characters who struggled to be healthy eaters.

Based on their stories, switching from one type of eater to another should be instantaneous and require minimal effort, as long as the eater is exposed to and likes the taste of the healthy food. For example, participants found one story—featuring a talking tomato at the neighborhood farm stand that encouraged the protagonist to eat him, explaining that he tasted like grapes—relatable because the protagonist changed in one day. As one 10-year-old male participant explained about his peer's story: "It's like showin' how much he can change in one day. Like one day you could be like feelin' like eatin' no vegetables. Like vegetables are nasty. . . . He tasted, and he tasted it and liked it."

Home environments are not always healthy—Many participants described home environments where eating a healthy diet was challenging. Several of the participants wanted to show pictures of delicious-looking healthy foods to their parents to encourage them to eat better. One 11-year-old participant said: "I'd show [the picture of fruit] to [my mom], she takes lots of medicines and the only fruit she eats is water-melon!" Many participants said they strongly agreed they could get the healthier and less healthy foods they want just by asking their caregivers, and fictional depictions of parents in narrative exercises often reflected this ease. One 13-year-old female participant described this by saying: "I just say it's what I wanna eat and my dad gives it out."

Consequences of unhealthy diets—Negative outcome expectations for eating a poor diet were known but were not seen as immediate or severe. Participants described and included relatively mild proximal health consequences in narrative exercises and discussions most frequently and with most detail. In particular, participants discussed dental caries, stomachaches, sleepiness, and fainting. For example, one participant-generated story ended with the fictional main character—Miles, an adolescent male with "a junk food habit"—having multiple teeth pulled at the dentist.

More severe proximal or medium-term outcomes such as weight gain were infrequently discussed. One exception was an 11-year-old participant who discussed his own high cholesterol in the context of a photograph of fried pork chops that made him "feel hungry" because he was no longer allowed to eat that food. Food or sugar "addiction" was discussed multiple times in group discussions and narratives.

Participants cited more distal outcomes as ways in which foods photographed by participants could affect their lives and those of family or community members, including diabetes, high cholesterol, high blood pressure, and death. One 11-year-old male participant discussed his photograph of a large box of cookies: "You eat the whole box and it's too much sugar. Over the time you can get diabetes from the sugar."

Participants had difficulty identifying positive outcome expectations for nutritious diets, particularly short-term ones. The only outcome from eating healthy foods discussed or appearing in narrative exercises was more energy.

Discussion

This study is novel in 2 ways: through the (1) adaptation of the Photovoice techniques to meaningfully engage younger youth and (2) exploration and rich descriptions of low-socioeconomic-status, urban, African American youths' perceptions of their neighborhood food environment. This is the first study to offer creative, narrative-based strategies for adapting Photovoice and other participatory methods to younger participants. It builds on the evidence from Dennis et al. that indicate that photo elicitation can be a key component of engaging youth in participatory research.¹⁶ These results indicate that this method can be used to elicit youths' perceptions for the purposes of tailoring intervention designs and materials as well as to encourage engagement. There is a growing body of evidence showing that when youth are engaged and excited about developing changes to their communities, they act as agents of change impacting the caretakers, adults, and policy makers with whom they interact.^{27–29} Teaching photography skills and providing digital photography equipment to early adolescents piqued their interest in participating in the study and the subject matter. Participants stated that they were used to taking pictures in their daily lives (via cell phone or digital cameras), but through the facilitated discussions where peers offered specific suggestions and the narrative exercises, the youth were able to share more stories and engage more deeply with each other about food in their lives and neighborhood.

This Photovoice project aided researchers and stakeholders in understanding youths' perspective on their food environments, which has implications for the design of interventions to encourage more healthful diets in urban, African American early adolescent populations. In particular, our results indicate the need for careful and strategic messaging in such interventions. Social marketing messages should address youth's concrete thinking about healthy and unhealthy foods and diets when considering appropriate messaging strategies.³⁰ Additionally, though prior research indicates that youth often need to try novel foods many times before they enjoy their taste,³¹ our findings indicate that youth believe that changing from an unhealthy eater to a healthy one should be instantaneous and complete. This suggests that interventions should focus on encouraging early adolescents to try new foods as many times as they need to change their tastes and messaging to support recommended dietary principles such as moderation and variety as described in the *2015–2020 Dietary Guidelines for Americans*.³² This research indicates that specific messaging that may be effective would be to refute the idea that, as one participant stated: "Everything that's healthy is kind of not good." Strategies could include taste tests as well as messages that relate novel foods to those youth already enjoy. Similarly, characters in their stories were more likely to try new foods if a trusted friend recommended them, not a parent or other uncool healthy eater, suggesting the potential efficacy of peer educators. Finally, promoting additional short-term benefits to eating well could be advantageous because these were not salient to participants in this study.

Strengths and limitations

The research described in this article has both strengths and limitations. A primary strength of the study was the strong collaboration between academic and community partners. Another strength was the use of Photovoice methodology in a novel population. Prior

projects have largely involved adults or older adolescents, and evidence suggests that participatory research and projects in younger children could be fruitful, particularly if care is taken to design programs in appealing ways such as including narrative exercises.²¹

One major limitation of the study was that the topic of the Photovoice study was decided a priori, instead of through a needs assessment with participants as Wang and other methodologists suggest.²⁴ Despite the relatively large sample size for a Photovoice project, the participants in this program may have been slightly different than the population of the BHCK parent study because the Photovoice program was completed with a sample of youth during summer camps. Summer camps at recreation centers are not free, which may have indicated that these participants were of slightly higher socioeconomic status than the average resident in these neighborhoods. Future research should address the salience of this topic and effectiveness of the approach used with younger adolescents and confirm findings in a larger group of youth.

Dissemination of findings

A key component of the Photovoice methodology is to disseminate the photographs and key findings to generate a voice for change that is grounded in the community. In this program, youth participants showcased their work to their peers, parents, and recreation center staff at camp closing ceremonies. Project findings were presented to several groups of Baltimore stakeholders, including the community collaborators of the BHCK parent study (recreation center staff and representatives from local nonprofit nutrition organizations), Baltimore City Recreation and Parks Department leadership, and the Baltimore Food Policy Advisory Committee. Additionally, this project was highlighted as a feature story in the Global Obesity Prevention Center at Johns Hopkins quarterly e-mail newsletter, which is sent to a listserv of over 500 subscribers.

Conclusions

Photovoice is a participatory methodology that can be adapted to effectively be implemented with younger youth ages 10–13, through strategic activities such as storyboarding and tableaux. The use of Photovoice engages youth in identifying aspects of their communities that support and detract from their health and that of other community members and encourages their role as agents of change in improving their neighborhoods.²¹ African American youth from low-socioeconomic-status, urban neighborhoods identify that their neighborhoods provide ready access to junk foods but disagreed upon the ease of accessing healthier options such as fresh produce and baked foods. Youth participants dichotomously classified certain foods and people as healthy or unhealthy and identified that changing from being a healthy to an unhealthy eater should occur rapidly. Strategies to address these perceptions should be discussed and incorporated into food environment interventions for low-socioeconomic-status, urban African American youth.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Description of the Photovoice program by session.

Session	Content focus	Activities	Photo hunt assignment
1	Introduction to Photovoice and photography techniques Establishing rules for the sessions and etiquette for taking photographs (asking permission to photograph people/places, obtaining photo consents)	Receiving the cameras Role-playing obtaining photo consent forms	Photographing "My day in food" (personal food environment)
2	Group discussion of photos taken in 1 photo hunt, with specific questions to elicit perspectives of audience members and the photographer Expansion of photography techniques	Creation and discussion of tableaux	Photographing "Food in my neighborhood" (neighborhood food environment)
3	Field trip photo hunt examining a variety of different food sources in the neighborhood immediately surrounding the recreation center Field trip sites at recreation centers included a corner store, a local fast food chain, a carry-out an urban farm, and a food truck	Field trip visits	Photographing "Food in this neighborhood" (recreation center neighborhood food environment)
4	Group discussion of photos taken in photo hunts 2 and 3, with specific questions to elicit perspectives of audiences members and the photographer Program wrap-up and presentation of awards	Creation and discussion of storyboards	N/A