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Using Photovoice to Identify Factors that Influence Children's Health

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ABSTRACT

Purpose: Children in the United States are at risk for developing obesity at higher rates than ever before. The study investigated if a picture taking assignment based on Photovoice was effective in engaging children in a discussion about factors that influenced their health and participation in active occupations. **Method:** Seventeen children between the ages of 10 and 11 years old completed the picture taking assignment and participated in a structured discussion. **Results:** The children were able to identify factors that promoted a healthy lifestyle, as well as factors that did not promote a healthy lifestyle. The children also established individual goals related to health and participation in active occupations. **Conclusions:** Occupational therapy practitioners who work with children can integrate similar assignments into their practice. Such assignments will provide children with the opportunity to discuss and share their opinions and concerns, as well as identify potential barriers they might encounter when implementing action plans.

INTRODUCTION

Children growing up today in the United States are at a significant risk for developing childhood obesity.¹ Approximately 16% of children will struggle with maintaining a healthy weight and an active lifestyle before they reach adulthood, compared to just 3.5% of children forty years ago.^{2,3} Children who are overweight or obese are at risk for psychosocial issues, such as social isolation, and co-morbid medical conditions, including diabetes, sleep apnea, high cholesterol, and high blood pressure.⁴ While all health professionals are concerned with childhood obesity, occupational therapists are uniquely prepared to help children identify and address the dynamic factors that influence their lifestyles and overall health.^{5,6}

This article reports the findings from an exploratory pilot study that used an innovative strategy to engage Latino and Caucasian elementary school students in a reflection during the school day about their lifestyles and occupational participation. Specifically, this study used a picture taking assignment based on Photovoice with students from a middle class neighborhood in a large metropolitan area to see if they could document factors that influenced their health and participation in active occupations.^{7,8}

Photovoice is a participatory action research method that has been used by occupational therapists to identify supports and barriers that influence participants' wellbeing.^{9,10} The Photovoice process involves participants taking pictures that depict aspects of their daily lives and answering a standard set of questions (see Table 1) to express their thoughts about ways to address or improve a situation or behavior of concern. Ideally, the participants' discussion leads to a plan of action that can be carried out by the group. Although research regarding the use of Photovoice with children and youth is available in the literature, scarce studies are available that examine how this participatory strategy can be used by children to identify factors that impact their lifestyles.^{11,12}

Table 1. Questions Used in Photovoice⁸

What do you see here?
What is really happening?
How does this relate to our lives?
Why does this situation exist?
What can we do about it?

METHODOLOGY

This exploratory pilot study included a convenience sample of 17 fifth grade students between the ages of 10 and 11 years old who attended a public elementary school located in a nearby suburb of a large Midwestern city. Approximately 41% of the students in this school district qualified for free or reduced lunch. Thirteen girls and four boys participated in this study; nine of the children were Caucasian and eight were Latino. Institutional Review Board approval was obtained before the researchers and school personnel implemented this project.

A picture taking assignment based on the original Photovoice questions (Table 1) was developed by the authors and key stakeholders from the school district. The students were asked to take pictures that answered the following questions: 1) What activities, places, and things do you believe support healthy lifestyles?; 2) What activities, places, and things do you believe do not support a healthy lifestyle? The picture taking assignment was designed to assess whether or not the children could identify supports and barriers to participating in health lifestyles. The picture taking assignment was presented to the students as part of a science unit.

Children whose parents did not return the university's internal review board (IRB) approved consent form and children who chose not to participate in this optional assignment went to another 5th grade classroom during this project. All children who agreed to participate in the study received numbered disposable cameras. Numbers were assigned to protect the children's privacy; the teacher retained the list of children's names and camera numbers. One of the authors, who is a native Spanish speaker, acted as a translator for students who preferred to participate in Spanish. Prior to taking their pictures, the children participated in a question and answer session with one of the key stakeholders from the district and their teacher. The purpose of this question and answer session was to establish ground rules for picture taking and to discuss possible solutions for dilemmas that might arise during picture taking. For example, children were asked to think creatively and take picture of objects that could represent individuals engaging in unhealthy behaviors (e.g. if someone at home smokes, take pictures of cigarettes instead of the person smoking) rather than taking pictures of people without their permission.

The children had one week to take all of the pictures and return the cameras to the teacher. The teacher collected the cameras and gave them to one of the authors for developing. Each camera was placed in its own envelope and correctly numbered. The children were the first ones to see their developed pictures and decide which pictures to share with the authors, the teacher, and classmates. The authors did not make copies of any of the pictures or retain any of them.

The children were given approximately five minutes to sort through their pictures and share them with nearby peers. The children were then asked to select pictures to share with the entire class that depicted things, places, and activities that supported healthy lifestyles and those that depicted things, places, and activities that did not support healthy lifestyles. The teacher invited the authors to facilitate discussions of the photos during two 30-minute long science periods. During these discussions, the researchers encouraged children to discuss how a particular picture contributed to their health status and how it affected occupational participation. Each child who chose to participate in the discussion was asked to reflect on their pictures based on the Photovoice prompts (Table 1).

Data analysis began after the first 30-minute long science period. The students' responses were categorized based on whether or not the student providing the response associated the picture with a healthy or an unhealthy lifestyle. Once the students' responses were placed into those two major categories, the authors completed a flip-flop analysis where each response that was determined to be healthy by the students was compared and contrasted to each response that they determined was to be unhealthy.¹³ Frequency data was also calculated.

RESULTS

The children shared a total of 134 pictures that reflected their perceptions about factors that influenced their health and participation in active occupations. Out of the 134 pictures, the children identified 57 pictures that depicted activities, places, and

things that helped them stay healthy and 77 pictures that depicted activities, places, and things that did not help them stay healthy, for a mean of 3.3 and 4.5 pictures respectively. Individual children selected an average of 7.8 pictures to share, with a range of three to ten shared pictures per child. Many of the children took similar pictures. The frequencies for each picture the children identified as representing a health promoting factor are presented in Table 2 and the frequencies for each picture the children identified as representing a non-health promoting factor are presented in Table 3.

Table 2. Pictures of "Things and Places that Help Me Stay Healthy"

Type of Item	Number of Total Photos
Fruits, juice, smoothie	11
Backyards/outdoors/playgrounds	9
A person exercising (walking, lifting weights, running)	8
Play and exercise equipment (e.g., ball, piano)	7
Vegetables	5
Bottle of water, drinking water	4
Someone sleeping (animal or person)	3
Eggs, milk	3
Cereal and nuts	3
Bike riding	2
Product signs describing food labels	1
Studying	1

Note: Children N=17, Total Photos N=57

Table 3. Pictures of "Things and Places that Do Not Help Me Stay Healthy"

Type of Item	Number of Total Photos
Candy/chocolate	12
Chips	11
Soda	11
Food (e.g., pie, pizza, food from international fast food chain, pastries, cakes, popcorn)	9
Watching TV and video games (consoles or handheld games)	8
Cigarettes/someone smoking	7
Animal or person laying on the couch	5
Can of beer, bottle of alcohol, or an adult drinking beer	5
Ice cream	2
Bed	2
Computer	1
MP3 player	1
Gun	1

Note: Children N=17, Total Photos N=57

Healthy Choices

Forty seven percent of the pictures that the children shared related to healthy choices or health promotion were related to food. For example, the children identified eggs, flavored water, dairy products, and produce as healthy. The children assigned nutritional value to certain foods, such as "eggs are healthy because they are a good source of protein" and "milk has protein for your bones."

The children also shared pictures of individuals exercising and sports equipment (e.g. treadmills, weights, and soccer balls), which represent approximately 37% of the pictures in this category. The children described exercise as something important to do for heart health, as well as weight control. Only 15% of the pictures the children shared represented places that they associated with health promotion. These pictures included a backyard, the school's playground, and a local fruit and vegetable store. The children indicated that backyards and the school's playground provided opportunities for exercise and to be outside. The local fruit and vegetable store were also selected by the children because "they have fresh fruits from California, like grapes."

Unhealthy Choices

Over 80% of the children shared pictures of high calorie food items (e.g. candy, chips, pizza, and pie) and identified them as unhealthy. The children explained that these foods contained a great deal of sugar, fat, and calories. High sugar items were noted to be unhealthy because they would "rot your teeth." Children stated that these foods could be made healthier by making substitutions or cutting down on certain ingredients (e.g. sugar, chocolate, and jelly). Several children also shared pictures that contained alcoholic beverages and one said that they were unhealthy because they are "bad for your teeth and eyes." Other children took pictures of cigars or family members smoking and explained that smoking is unhealthy because it causes lung damage and suggested that adults and teenagers should not smoke.

Children also took pictures of items that represented leisure occupations. Children shared pictures of family members watching television, talking on the phone, and playing video games. Children suggested that these occupations were unhealthy because they were not active. Overall, most children identified two places in the neighborhood that were associated with unhealthy choices. Both of the places, a popular fast food chain restaurant and a local pizza parlor, were designed around the occupation of eating. When asked why these restaurants were unhealthy, the children all agreed that when families go there they eat high calorie food and "no one even looks at the salad menu."

Goals to Promote a Healthy Lifestyle

As a result of the discussion, the children decided to develop and share personal goals to promote healthier lifestyles. Approximately half of the students' responses (52%) were related to eating a healthier diet. For instance, some children focused on their eating habits at home and what they would no longer do: "[I will] cut down on junk food" and "[I will] quit drinking pop." Besides sharing what they would eliminate from their diets, some children shared what they would start including: "[I will] drink more orange juice instead of eating triple chocolate cake" and "start eating apples and oranges." Other children addressed eating out. One child said, "Don't go to fast food restaurants. You can, but don't do it constantly. Maybe one or two times a week." While another said, "[I'll] cut down on fast food. Don't eat it everyday for lunch." Another student offered the suggestion: "Instead of pizza, [I'll] eat a home cooked meal."

Some children discussed goals that involved their family and what they would ask their parents to do support a healthier lifestyle. For example, one child suggested she and her classmates could try to influence the food their parents made available in the home, as well as what they purchased when they went grocery shopping: "tell your mom to put it [candy] in a secret hiding place" and "start buying more fruits and vegetables." Another child spoke about losing weight and how family members could support one another: "if you go on a diet, we'll all do it with you and watch each other's steps." Other children addressed the eating out habits of their families.

The remainder of the children's responses had to do with activity engagement. The children identified goals related to reducing the amount of time they engaged in sedentary occupations, such as "don't watch TV and eat fattening food at the same time." Others shared goals related to the ways they could monitor the time they spent in such occupations. For example, one child committed to playing on the computer only one time a week and to monitor her time spent on the computer with a chart or a timer she would keep nearby. Other children had goals related to getting more exercise. When the children were encouraged to be more specific, they shared goals related to increasing their overall activity levels without engaging in traditional exercise. Some of the occupations they planned on incorporating into their weekly routines included playing outdoors with pets, spending time at parks with family members, walking to the library, and shoveling snow.

Finally, the children shared ways that they would remember their goals. Some children suggested that they would put the pictures they took during the project in an album, make a poster for their rooms, place them on the door of the refrigerator, or tape them to their computers. The children indicated that displaying the pictures in prominent places would help them to remember to engage in more active occupations. Other children thought that family members could help remind them of their goals. One child said she was going to "keep [the pictures] in [my] mom's purse-so when [we] go out to buy, [we] buy something good." Another child suggested that she may not need the pictures in order to remember what she wanted to do to have a healthier lifestyle and that she would instead remind herself of her goals each night before going to bed.

DISCUSSION

This study supports the use of innovative approaches to engage students in discussions related to healthy lifestyles, and it also brings attention to an important topic of interest to occupational therapy practitioners, that of children's health. The study results suggest that the picture taking assignment based on Photovoice was used successfully to help children identify food products and occupations that help them engage in healthy lifestyles. Other studies conducted with children and youth have similarly

found that using photographs helps build participants' social competency, decision making, and perceived control over situations.^{12,14}

Picture taking assignments, like the one presented here, can be used by occupational therapists and school personnel as a primary intervention to determine the contextual factors that influence students' health from their own perspectives, and to increase the students' decision making opportunities related to time use and occupational participation.¹⁵ In this study, the children found a safe environment to express their opinions about healthy and unhealthy choices, as well identify goals and the actions they wanted to engage in to promote a healthier lifestyle, which included addressing family habits and routines.

The children's statements have critical implications for occupational therapy practitioners. First, the children who participated in this study were able to accurately identify factors that promoted health, as well as factors that did not. The majority of the pictures and comments they shared were related to food and beverage choices, rather than participation in roles or engagement in occupations. This finding may suggest that the children in this study conceptualized health to be more tied to diet and nutrition than to how they used their time. Time use has been cited as a major factor contributing to children's weight status.¹⁶ Occupational therapy practitioners can help children assess how they are spending their time and promote their development of interests and roles that will lead to increased engagement in active occupations.

Second, the children who participated in this study were able to establish goals related to promoting a healthy lifestyle. This finding has implications for how children may increase their perceived sense of control over their health.¹⁷ The children were able to make commitments and identify actions that they could take to promote their own health, as well as the steps their families would need to take in order for them to meet their personal goals. Occupational therapy practitioners can work with children and their families to address habits and routines related to health. In addition, occupational therapy practitioners can provide opportunities for children to make decisions about their own health and assist the adults in their lives to monitor their progress and respond supportively.

Despite these findings, there are several limitations related to the present study. The activities associated with this study took place during a science unit. However, data were not collected to evaluate the efficacy of including such an activity in the curriculum as it relates to the students' overall understanding of health-related concepts. In addition, the students were asked to create goals to promote participation in a healthy lifestyle, but these goals were never monitored. Finally, other pertinent personal information, such as weight, cardiovascular fitness, and body mass index were not collected for each student.

Further research needs to be done to assess whether or not the children who participate in a similar picture taking assignment are able to make progress toward their goals. A more in depth study using a time-series analysis or a longitudinal design would allow occupational therapy practitioners to understand and identify potential barriers and supports that the children encounter as they make changes in their lives. Further, future research should be focused on identifying the differences in children's activity patterns and eating habits during different times of the year, as well as how activity patterns correlate with age and other health factors, such as weight and body mass index.

This pilot study highlighted the importance of engaging children in a conversation about healthy lifestyles. Occupational therapy practitioners can integrate a similar picture taking assignment in schools or clinical settings. Using this technique would afford children with the opportunity to discuss and share their opinions and concerns about things that matter to them. In addition, it would provide children with an opportunity to identify challenges they might encounter and additional strategies they might use when implementing action plans they have developed, and would assist occupational therapists in designing child-centered intervention plans.

REFERENCES

1. Peterson KE, Fox MK. Addressing the epidemic of childhood obesity through school-base interventions: What has been done and where do we go from here? *Journal of Law and Medicine*. 2007;35(1):113-30.
2. Haas J, Lee L, Kaplan C, Sonneborn D, Phillips K, Liang S. The association of race, socioeconomic status, and health insurance status with the prevalence of overweight among children and adolescents. *American Journal of Public Health*. 2003;93(12):2105-10.
3. Ogden C, Carroll M, Curtin L, McDowell M, Tabak C, Flegal K. Prevalence of overweight and obesity in the United States 1999-2004. *Journal of the American Medical Association*. 2006;295(13):1549-55.
4. Schwimmer J, Burwinkle T, Varni J. Health-related quality of life of severely obese children and adolescents. *Journal of the American Medical Association*. 2003;289:1813-9.

5. Clark F, Reingold FS, Salles-Jordan K. Obesity and occupational therapy (position paper). *American Journal of Occupational Therapy*. 2007;61(6):701-3.
6. Cahill S, Suarez-Balacazar Y. Promoting children's nutrition and fitness in the urban context. *American Journal of Occupational Therapy*. 2009;63(1):113-6.
7. Wang C. Photovoice: A participatory action research strategy applied to women's health. *Journal of Women's Health*. 1999;8(2):185-92.
8. Jurkowski J, Paul-Ward A. Photovoice with vulnerable populations: Addressing disparities in health promotion among people with intellectual disabilities. *Health Promotion Practice*. 2007;8(4):358-65.
9. Jurkowski J, Rivera Y, Hammel J. Health perceptions of Latinos with intellectual disabilities: The results of a qualitative pilot study. *Health Promotion Practice*. 2009;10(1):144-55.
10. Wang C. Youth participation in Photovoice as a strategy for community change. *Journal of Community Practice*. 2006;14(1/2):147-61.
11. Wang C, Morrel-Samuels S, Hutchinson P, Bell L, Pestronk R. Flint Photovoice: Community building among youths, adults, and policymakers. *American Journal of Public Health*. 2004;94(6):911-3.
12. Foster-Fishman P, Nowell B, Deacon Z, Nievar M, McCann P. Using methods that matter: The impact of reflection, dialogue, and voice. *American Journal of Community Psychology*. 2005;26(3/4):275-91.
13. Strauss A, Corbin J. *Basics of qualitative research: Techniques and procedures for developing grounded theory*, (2nd ed). Thousand Oaks, CA: Sage;1998.
14. Mosley L, Jedlicka J, Lequieu E, Taylor F. Obesity and occupational therapy practice: Present and potential practice trends. *OT Practice*. 2008;13(7):8-16.
15. Vandewater E, Shim M, Caplovitz A. Linking obesity and activity level with children's television and video game use. *Journal of Adolescence*. 2004;27(1):71-85.
16. Malcaren V, Drahota A, Hamilton N. Children's health-related locus of control beliefs: Ethnicity, gender, and family income. *Children's Health Care*. 2005;34(1):47-59.

KEY TERMS

Obesity, Health Promotion, Pediatrics, Self-management