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Evaluating Impacts of School-Based Extension Garden Programs from a Child's Perspective

Abstract

Minority children and adolescents living in rural areas, below poverty guidelines, are less likely to engage in healthy food choices or a healthy lifestyle, and this contributes to obesity issues. Providing children with the skills and knowledge to lead healthy lives is a way to combat this epidemic. Focus groups were conducted at three Extension school-based gardens to determine participants' perspectives on the impacts of participation. It was determined that Extension school-based gardens provide children with the opportunity to engage in learning about healthy eating and food production, while engaging in activity outside of the classroom.

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Introduction

In the past 30 years, childhood obesity has increased exponentially, doubling in children and nearly tripling in adolescents (Center for Disease Control, 2013). Obese youth are more likely to be at risk for factors leading to cardiovascular disease, type 2 diabetes, bone and joint problems, and social and psychological problems (Daniels et al., 2005; Office of the Surgeon General, 2010). There are significant racial/ethnic disparities in the prevalence of childhood obesity. Mexican American boys and African American girls were found to be the groups with the highest prevalence of obesity (Ogden & Carroll, 2010). Underserved populations have the potential to be impacted by school-based Extension garden programs (Odera, Lamm, Owens, Thompson, & Carter, 2013).

School-based gardens allow for students to be active, spending time outside planting, weeding, and harvesting (Ratcliffe, Merrigan, Rogers, & Goldberg, 2011). They help increase student activity and engagement and knowledge of food production (Beckman & Smith, 2008; Hess & Trexler, 2011). Through the use of external objective assessments, research has shown that Extension school garden

programs help increase student activity and health (Odera, et al., 2013; Phelps, Hermann, Parker, & Denney, 2010), with Extension promoting healthy behavior change through the establishment of maintainable efforts (Dart, Frable, & Bradley, 2008; DeMarco, Relf, & McDaniel, 1998). However, little is known about what children engaged in these programs feel while participating and the impacts gardening programs are actually having on their thoughts about health. Understanding the child's perspective is important to gauge the true impacts of a school gardening program.

The purpose of the study reported here was to better understand how participants of school gardening programs feel their lives are impacted by school gardens. The objective was to identify participants' thoughts, feelings, and perceptions of impacts from their engagement in an Extension garden program.

Methods

A qualitative research design was used to gain insight into a specific Extension school-based gardening program run by Florida A&M University Cooperative Extension Program from the participants' perspective (Denzin & Lincoln, 2005), The program allowed participants to gain knowledge, skills, attitudes, and new behaviors by participating in the planting, maintenance, and harvest of a school garden during the 2011-13 school years. Held at three different schools, the program was located in the Florida panhandle, where children lived in predominantly African American and Hispanic communities and were vulnerable to the effects of poverty. At the conclusion of the school year, three focus groups, each with 20 participants age 9 -12, were conducted. Each focus group lasted between 30 and 60 minutes. Questions were driven by a moderator guide and revolved around student participation in the garden, including information learned, consumption of vegetables grown, garden plan creation, and working with adults.

During the focus groups, participants were asked to answer questions honestly and openly. A moderator and note taker were present. The focus groups were recorded and transcribed. Data were analyzed using the constant comparative method (Corbin & Strauss, 2007; Merriam, 1998). Observations, notes from the focus group, and quantitative assessments were used for triangulation.

Findings

Themes and subthemes were identified through the data analysis. The overarching themes included participant feelings about school gardens, knowledge gain, perceived importance of a school garden, perceptions about vegetables, and thoughts on program structure.

Participant Feelings About School Gardens

Overall, the participants thought gardening at school was a great idea and that it would be beneficial to have gardens in other schools. Participant feelings were broken down into positive and negative subthemes.

Participants shared their feelings about the gardens stating, "it's work, but it's fun!" They felt it was fun because they "got outta school," and another clarified, saying "We weren't technically outta school... well, I wasn't in a class doing boring work." Another participant stated: "It was very good

because it does like, nature, and we get to go outside and do stuff."

Frustration was apparent in one of the focus groups where participants expressed confusion "... you don't know how to... plant it and stuff or what days to water it..." Similarly, another participant said, "I get frustrated cause I don't know which one is a weed and which one is a plant."

Knowledge Gain

Participants described having learned about many different topics from their participation in the school Extension garden program. They gained technical knowledge ranging from how to plant to the parts of the plant and plant processes. Participants also described things that surprised them.

Participants resoundingly reported gaining technical knowledge about plants. One participant stated, "[The garden] teaches you how to... plant... vegetables." Another stated they learned "we need plants because the air that we breathe it has chemicals in it so when it goes through the leaves it gets stuck on the leaves and new air comes out." Offering a broader perspective another participant stated, "we needed to... help... animals, plants and insects."

The participants also shared some things that surprised them. Participants said they did not know that "plants can grow that big and tall!" and that plants could "even survive in Tallahassee." One participant stated, "What surprised me was when greens had grew I never knew they grew as a leaf, I thought that like they grew shredded." They learned that they had to place the seeds into the ground in a certain way so that the vegetable would grow properly. "Plant it with the root facing upward it will grow downward or it just won't grow at all."

Importance of a Garden

Participants believed that school gardens were important. They saw how the gardens could be used to help others, provided various health benefits, and how gardens could be an avenue to earn money.

Participants described how the garden and what is produced could help others. One participant stated, "we get to have fun and plant vegetables for people who don't have vegetables to buy." Participants also discussed that the produced vegetables could be donated. One participant related knowledge gain and benefits to others by stating, "[The garden] gives you and your child, or whoever you have with you experience so they can do it."

The participants believed the gardens provided many different health benefits. One participant stated, "[The garden] provides food and energy to help you grow." A participant referred to increased strength associated with gardening when he said, "[Eat green vegetables]...so you can be big and strong like Popeye when he eats spinach." As a group, participants perceived that vegetables help the immune system and blood pressure and help prevent disease.

Participants also saw the garden as an opportunity to make a profit. They said they could sell the plants and seeds for profit. They also said they would work for someone else in their garden. One participant said it would be "like babysitting plants."

Participants believed they could save money. One participant stated, "you don't have to pay people at

the store if you already have it," and another said, "you can plant vegetables to eat for yourself... if you don't have enough money to buy vegetables at Wal-Mart." One participant said "...because you have your own experience to grow your own foods to see how other farmers do it... You can learn." Another benefit of gardening reported by participants was the ability to be physically active while being outdoors.

Perceptions of Vegetables

Participants conveyed opinions about the look and taste of the different vegetables, their preferred way to eat their vegetables at home, and perceptions about the benefits of growing their own vegetables rather than buying them. Participants did this while demonstrating reasoning and observation skills.

Participants demonstrated curiosity and opinions about certain vegetables. For example, a few participants were curious about broccoli stating, "Why does broccoli look like trees?" Another participant responded by stating, "Maybe it's just genetically engineered to look like that!"

Participants gave opinions about the appearance of several vegetables. One stated, "When you walked past [the carrots] they looked poisonous because the leaves are different than the other leaves." Another participant said that both the name and the look of zucchini did not appeal to them. Cabbage was also said to have "pimples" on the skin and a bad taste. Two other participants stated they thought onions had a weird smell and "they make me cry."

Many participants said they thought eating vegetables was important. However, a few said it was not important to them. "It's kinda important but when you're young, you really don't like to [eat vegetables]." One participant said "some vegetables are good for your eyes and stuff, but as a child you don't really care about that." Other participants described how they ate the vegetables. Two participants stated they ate their vegetables, but it had to be with cheese. Another said "I just eat my vegetables raw because it's better."

Thoughts on Program Structure

Participants had many thoughts about the structure of the program. They made comments about the use of note taking while in the garden and about working with the adults in the program.

Taking notes was said to be useful in helping to remember to keep track of what they were seeing, the planting process, and to record observations.

> Like if you took the notes on what to do like how to actually start growing any type of plant you can always look back to how to grow that plant you always know the same process to grow the other ones and you don't have to think about what you doing.

However, one student found it to be inefficient "...because you have growing process. Why would you write down notes? You have growing process right in front of you."

Several participants were wary about saying the wrong things because they truly wanted to participate. One participant said "...cause if we say what we not supposed to say, [the Extension educator] will tell on us... If we say that in front of him he might not let us plant." They do not want

to upset the [Extension educator] for fear of not being allowed to participate.

On the other hand, participants said it was good to work with the adults in the garden. One participant stated, "I loved it because they really helped us learn how to plant and how to teach us which plants are which." One participant said they felt it was easier to express him/herself and felt more comfortable after the program.

Conclusions

The study reported here was designed to gain a child's perspective on the impacts of an Extension school-based school gardening project. Participants described having greater technical knowledge from their participation and appreciated spending time outside. The participants spoke about growing vegetables and their opinions of the different vegetables grown. They said that gardens could be a means of saving money and a source of pride and provided safer vegetables. Participants also know why vegetables are important to their health. Some participants described having tried new vegetables; however, participants did not speak about an increase in household vegetable consumption.

Gardens are said to increase student academic and social skills (Armstrong, 2000; Blair, 2009; Ozer, 2007). Participants demonstrated reasoning skills when reflecting on their learned technical knowledge. Participants also expressed wariness when speaking about working with adults.

Recommendations

The findings show students felt their knowledge was increased, however still felt frustration from lack of understanding. Extension educators should ensure participant confidence in tasks before heading out to the garden to limit confusion. When participants feel better prepared, they will be more engaged. Confidence may also help participants feel more comfortable when speaking with adults. Allowing more time to meet and interact with Extension educators would increase comfort levels on the part of both the participants and the coordinators.

Last, while participants had relatively positive perceptions, it was difficult, if not impossible, to judge behavior change. While participants indicated which vegetables they preferred, they did not describe changes in eating habits or attention to healthier life choices. Another study should be conducted to identify the long-term impacts of participation over time.

Overall, participation in Extension-based school gardens has a positive impact on rural, minority populations, but further studies could focus on whether vegetable consumption in the home was impacted by gardening activities children engage in at school. Childhood obesity is a threat to many children, especially those living below poverty. It is imperative to give minority children the knowledge and understanding of how to live a healthy and active lifestyle. Based on these findings, it is recommended that Extension educators reach out to minority populations through the development of school garden programs.

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