WB School of MEDICINE

OAKLAND UNIVERSITY WILLIAM BEAUMONT

Introduction

- Poor nutrition is a significant contributor to the severe and persistent health issues that plague lowincome communities.³ In Detroit, the systemic issues that contribute to poor nutrition constitute a lack of availability that is severe enough to qualify as a "Food Desert."³ Given these circumstances, the majority of Detroit residents are more likely to die a premature death from diet-related disease, when holding other factors constant.³
- Improving the availability of healthy produce may not be enough to create better health outcomes if individuals are not inclined towards consuming it. The current research that is geared towards changing views on vegetables concentrates much of its interest primarily among elementary school and middle school students and do not focus on low-income students. Studies have demonstrated that nutrition education for elementary school children and middle school students was more effective in increasing the students' consumption and overall view of fruits and vegetables when the nutrition education was coupled with a gardening component.¹
- The more exposure to gardening the students received, the better the increased consumption was for elementary school students.¹ Students have opined that the vegetables grown in the garden tasted better than those from the store.¹

Aims and Objectives

- This project seeks to evaluate the effectiveness of a gardening program in changing the perception of vegetables for lower socioeconomic high school students. The high school students that participated learned how to garden and participated in maintaining a garden during a sixweek summer educational program.
- This study population was chosen in order to expand the current understanding of eating habits in a population that has not received great attention.
- This study aims to evaluate whether participation in a gardening program resulted in a change in the perception that high school students who come from low-income backgrounds have towards certain vegetables. The following aims set the foundation for developing and evaluating similar gardening programs with underprivileged students.

Study Design

Changing Vegetable Eating Habits Through Gardening for Lower Socioeconomic High School Students Kunal Kedar¹, Darryl Taylor (D.D.S.)²

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Methods

• 74 students completed both the pre- and post-surveys out of the 120 students who participated in the summer program. The survey contained Likert Scale questions in regards to views on 16 common vegetables: greens, cabbage, carrots, green beans, peas, corn, broccoli, cauliflower, radishes, sweet peppers, onions, garlic, lettuce, okra, tomatoes, beets and 7 views on gardening and vegetables: whether gardening is enjoyable, whether gardening is difficult, whether gardening is good exercise, desire for future garden, desire to grow own food, whether they want to increase vegetable intake, whether they think they can grow vegetables for themselves.

• The produce that students grew included collard greens, carrots, beets, green beans, tomatoes, sweet peppers, hot peppers, garlic, radishes, pea pods, cucumbers, potatoes, eggplant and squash. They grew this produce from seeds or seedlings into mature plants. Cucumbers, potatoes, eggplant and squash were included in the garden but were not included in the survey although green onions, lettuce, okra, cabbage, broccoli, corn, cauliflower and brussel sprouts were included in the survey but were not grown in the garden.

• The pre-and post-survey responses were compared using a two sided paired t-test methodology to determine the effectiveness in the intervention in changing the responses.

Results

Compared to the pre-test, the averages for the post-test were not significantly different for 21 of the variables at the alpha significance level of 0.05. The two statistically significant results were for the average view of carrots (p-value=0.0028) and whether they enjoyed gardening (p-value= 0.0241). In both instances, the post-test averages were lower than the pre-test averages.

Based on the averages, beets and radishes were the two vegetables that the students overall had a less than neutral view of while the rest were neutrally or favorably viewed. Radishes, beets, and okra were the vegetables that greater than 20 students in the survey were unfamiliar with or had never tried.

Conclusions

• There was no statistically significant change in pre-test and post-test view on the vegetables except for carrots and whether the students enjoyed gardening.

• The statistically significant drop in averages for carrots and enjoyment of gardening did not drop the averages below their positions between "neutral" and "like."

• The overall minimum change in vegetable preference given the intervention could be due to many factors, including but not limited to: preferences that are more static given age, length of the intervention, lack of standardized interactions with the garden, high baseline for vegetables before intervention, lack of ownership of the garden, lack of cooking and consuming the vegetables grown in the garden, small sample size, previous gardening experience, incomplete participation in the survey, and exposure to vegetables in the dining hall during the six week program.

• Further studies should take these factors and limitations in mind to better characterize the influence of gardening on the view of vegetables by lower socioeconomic high school students

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Acknowledgements

I would like to thank Horizons Upward Bound at Cranbrook Kingswood for its dedication to the education of the underprivileged and for being the inspiration and partner in this research.

