

20.22: School Gardens and Vegetable Consumption

Learning Objectives

- School garden program benefits

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Overview

School garden programs are gaining popularity because of their numerous benefits for children: outdoor exercise, social skills, connecting with nature, environmental stewardship, active learning, experiential science education, higher academic achievement, and transformed attitudes and habits related to fruits and vegetables. By integrating the regular science class with gardening activities in which students plant, nurture, harvest, prepare, and consume produce grown in the schoolyard, studies are showing that garden-based learning can improve children's consumption of fruits and vegetables.

This study investigated the impact of participating in a school garden program on the ability to identify, willingness to taste, preference for, and consumption of vegetables. Subjects were 320 sixth-grade students aged 11 to 13 years at two intervention schools and one control school. At the intervention schools, garden-based learning activities were incorporated into the regular science class for a period of four months. The control school did not include a garden program as part of its science class. Two questionnaires – Garden Vegetable Frequency Questionnaire and taste test – assessed the outcome variables using vegetables typically grown in school gardens that were also ethnically and culturally appropriate for the study population. The Garden Vegetable Frequency Questionnaire assessed the types of vegetables consumed the day before as well as usual consumption frequency. The taste test involved tasting five raw vegetables (carrots, string beans, snow peas, broccoli, and Swiss chard). Both questionnaires were administered at the outset and end of the study. Change scores (posttest minus pretest) were compared between the garden (intervention) group and the control group.

Questions to Answer

Do hands-on school garden programs increase vegetable consumption in children? What are some of the potential sources of bias in research studies?

Design Issues

This study used a “quasi-experimental” design, which differs from an experiment in that the students were selected and assigned to the intervention group and control group by a method other than random assignment. With this type of design, there is a greater chance that the intervention and control groups might differ at the outset of the study in ways that could bias the results of the study. Since the study population was middle-school students living in low-income, urban communities, the results of the study cannot be generalized to other settings. The study did not measure the actual amounts of vegetables that students consumed, so no conclusions can be drawn about number or size of servings.

Descriptions of Variables

Tables 20.22.1: Description of Variables

Variable	Description
School garden program group	Garden (intervention) and Control groups: Whether or not a student experiences hands-on gardening activities at school

Consumption of vegetables at school	Assessed by the taste test, it measures whether or not a student ate each of five specific vegetables at school
Consumption of vegetables at home	Assessed by the taste test, it measures whether or not a student also ate each of the five specific vegetables at home

Links

Ratcliffe et al. article

The benefits of school gardens

First Lady Michelle Obama Hosts White House Garden Spring 2011 Planting

References

- Ratcliffe, M. M., Merrigan, K. A., Rogers, B. L., Goldberg, J. P. (2011). The effects of school garden experiences on middle school-aged students' knowledge, attitudes, and behaviors associated with vegetable consumption. Health Promotion Practice, 12, 36-43.

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