

African American Fruit and Vegetable Garden Project: An Intervention to Promote Fresh Fruit and Vegetable Consumption Among Incarcerated Juvenile Males*

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Abstract

This study set out to identify a means to increase the consumption of fruits and vegetables for incarcerated African American juvenile males through an educational program that focused on planting a garden. Surveys were administered to 125 incarcerated African American juveniles males aged 15 to 17. The program consisted of 39 sessions of 75 minutes each, twice a week for 15 weeks. Sessions focused on fruit and vegetable consumption, gardening, and nutritional knowledge. Prior to the workshops, none of the participants identified fruit and vegetable consumption, gardening and nutritional knowledge. After the workshops, all had increased their nutritional knowledge. Half stated that their fruit and vegetable consumption had increased because of gardening at the correctional facility. Participants also expressed an interest in learning more about gardening. The study concludes that health professionals can educate African American juvenile males about gardening and nutrition to help overcome barriers to fruit and vegetable consumption.

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Introduction

A sentence of imprisonment for African American Juvenile males should not come with a life-long sentence of obesity, cardiovascular disease, diabetes, and other health consequences. Messages abound that tell us to eat a minimum of five servings of fruits and vegetables each day, the average American, especially the African American juvenile male who are or have been incarcerated, eats only three and a half servings per day (Foerster, Kizer, Disogra, Bal, Krieg, & Bunch 1995; Subar, Heimendinger, Patterson, Krebs-Smith, Pivonka, & Kessler 1995). Though there are many reasons for this, most of the barriers are imposed by the juvenile correctional system and not self-imposed by the incarcerated youth (Harnack, Block, Subar, Lane, & Brand 1997). Trying to incorporate healthy eating in correctional settings is challenging because finding vendors to provide fresh fruits and vegetables is nearly impossible (Reill 2001). In most cases, budget constraints make it is very difficult to provide fresh fruits and vegetables for an increasing prison population. Across the United States, the average food cost per inmate is \$3.71 per day (Stein 2000). Furthermore, correctional facilities may be unwilling to spend public money on healthy foods that they are unsure African American juvenile males will eat, based on their cultural preferences (Stein 2000).

African American males who are not a part of the juvenile correctional system enjoy some resources that address barriers to eating fruits and vegetables. For example, the National School Lunch Program provides food vouchers or free lunch, potentially alleviating this barrier to access fresh fruits and vegetables. However, for those who are incarcerated, such programs are not an option. In spite of the inadequate fruit and vegetable consumption among African American juvenile males, few primary prevention programs have been implemented to increase their fruit and vegetable consumption. The "African American Fruit and Vegetable Garden" project was a pilot program that utilized college students to help African American juvenile males learn about garden maintenance and harvesting.

Table 1

Task Development Time Line for African American Fruit and Vegetable Garden Project

Task	Monthly Time Line for Accomplishment				
	June	July	August	September	October
Needs Assessment	X				
Planning and Goal Setting	X				
Implementation		X			
Gardening		X	X		
Harvesting				X	
Distribution of Produce to Inmates					X
Evaluating					X

Objectives for the participants were to increase the consumption of fresh fruits and vegetables among incarcerated African American males by having them establish a garden on the correctional site, distribution of free garden produce among juvenile inmates, and provide opportunities for learning to prepare fresh fruits and vegetables in Upstate New York. The time frame for planting the garden, harvesting, and evaluating the program ran from June to October 2005.

Methodology

The "African American Fruit and Vegetable Garden" project was located at a New York state juvenile detention facility. One hundred twenty-five incarcerated African American juvenile males participated in the study. In order to learn how to grow fruits and vegetables effectively, study participants attended specific workshops on gardening at the correctional facility. This consisted of thirty-nine sessions of 75 minutes each. College students facilitated the sessions twice a week. Student facilitators were enrolled in a 15-week upper level course at Ithaca College. They received training from experts in agriculture, community nutrition, health promotion techniques, and other relevant topics. The students who led the workshops also served as peer counselors to the study participants.

Prior to the 15-week program, inmates at the correctional facility prepared a raised square plot for the garden on property at the facility. During the instructional program, the study participants completed activities that increased their gardening knowledge and skills. A crucial component of the program was teaching inmates garden maintenance and harvesting. Upon completion of the workshops, inmates were awarded an "African American Fruit and Vegetable Garden" t-shirt and a certificate of completion.

To evaluate the effectiveness of the intervention, participants were administered a pre-test before beginning the program and a post-test at the end of the 15 weeks. The instrument consisted of questions about gardening, consumption of fruits and vegetables, and nutrition. These components were evaluated on a five-point scale. A score of 1.0 indicated little or no knowledge about gardening, fruit and vegetable consumption, and nutrition. A score of 5.0 indicated comprehensive knowledge in these areas.

Results

The 2005 growing season ended with 5,006 pounds of produce grown and distributed among the juvenile inmates. The post-test conducted at the end of the 15-weeks evaluated the short-term impact of the intervention on the participants' knowledge about gardening, consumption of fruits and vegetables, and nutrition. The results are presented in Table 2 below.

Table 2

Knowledge of Gardening, Fruit and Vegetable Consumption, and Nutrition (Mean Values)			
Knowledge Measures*	Pre-test	Post-test	Change (Pre-Post)**
Gardening	1.80	4.00	+2.20
Fruit and Vegetable Consumption	1.25	4.5	+3.25
Nutrition	1.60	4.00	+2.40

* Values ranged from 1.0 to 5.0

** Changes were significantly different from pre-test to post-test ($p \leq 0.05$)
(N = 125)

The initial mean knowledge score indicates that the inmates participating in the program had very little knowledge about the importance of fruit and vegetable consumption before the "African American Fruit and Vegetable Garden" project. Post-test scores indicate that the participants had increased their nutritional knowledge significantly. In addition, more than half of the inmates in the study stated that their fruit and vegetable consumption had increased because of gardening at the correctional facility. Study participants also expressed a desire to learn more about gardening.

Conclusions

This study has some limitations. The sample was relatively small (N = 125) because the correctional facility only allowed non-violent inmates to participate. Additional information, such as whether the participant lived in a rural or urban setting, where gardening is not as prevalent, would have been useful. In addition, the participants' self-reports of increased consumption would have been more informative with pre-test questions about eating habits and preferences. Despite these limitations, this study suggests the need for a comprehensive approach to educate juveniles about gardening and fruit and vegetable consumption.

African American juvenile males are at high risk for a number of health-related problems including illicit drug consumption (Ruddell and Mays 2004). African American males who are placed in the correctional system should be given the opportunity to learn about fruit and vegetable consumption while they are incarcerated. This approach may encourage them to maintain their fruit and vegetable consumptions upon release. As with many correctional facilities, securing sufficient funds for inmates to eat healthy continues to be one of the biggest challenges. This study shows that health promotion interventions such as the "African American Fruit and Vegetable Garden" can be successfully implemented within the correctional facility. The cost of such interventions might be lowered by charging a modest fee to distribute produce from the gardens to other correctional facilities.

A number of recent studies have demonstrated that low fruit and vegetable consumption, especially for Blacks, increases the risk of health problems such as colorectal cancer, high blood pressure, and coronary heart disease (Houston, Stevens, Cai, & Haines 2005; Sato, Tsubono, Nakaya, Ogawa, Kurashima, Kuriyuama, Hozawa, Nishino, Shibuya, & Tsuji 2005; Alonso, de la Fuente, Martín-Arnau, de Irala, Martínez, & Martínez-González 2004; Dauchet, Ferrières, Arvieller, Yarnell, Gey, Ducimetière, Ruidavets, Haas, Evans, Bingham, Amouvel, & Dallongeville 2004). Some correctional facilities report that they are offering healthier menus for inmates by increasing fresh fruit and vegetable content (Riell 2001). An earlier issue of *Prevention*, a popular consumer nutrition magazine, ported a connection between improvements in delinquents' behavior and diets high in fruits and vegetables (Kinderlehrer 1983). This is another area in need of scientific investigation. While we cannot advocate that a prison system establish a fruit and vegetable garden in all of its correctional facilities, innovative health promotion interventions can educate African American juvenile males about nutrition while they overcome cultural barriers to eating fresh fruits and vegetables.

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