Abstract

Background: Increased access to affordable produce may increase fruit and vegetable serving intake. The objective of this study was to characterize the individuals utilizing the Veggie Van in low-income areas of Grand Rapids and Muskegon, MI including food security status and fruit and vegetable servings.

Methods: The participants were residents in Muskegon and Grand Rapids, MI purchasing food from the low-income sites of the YMCA Veggie Van. Demographics, food security, participation in food assistance programs, and income of the participants was collected. Fruit and vegetable servings were measured with three 24-hour recalls. Anthropometric measures (height, weight, and waist circumference) were collected for all eight participants. Three participants completed both the survey and recalls, three completed only the recalls, and two completed only the survey.

Results: The majority of participants who completed the survey were of low food security (60%). Some of the respondents participated in food assistance programs such as SNAP (80%), WIC (40%) and Double-Up Food Bucks (40%). The median fruit and vegetable (excluding potatoes) servings of participants that completed the 24-hour recalls was 1.44 (IQR 0.56, 1.46) and 1.46 (IQR 93, 2.83).

Conclusion: At low-income sites, the YMCA Veggie Van is reaching primarily low-income individuals with potentially low food security. The fruit and vegetable servings of Veggie Van participants is much lower than the recommendation of 7-9 servings per day, which may suggest that fruit and vegetable intake is influenced by more than increasing access.

Background

Residents of low-income communities often consume fewer servings of fruits and vegetables than those who live in areas of higher socioeconomic status (1). This is concerning, as diets low in fruit and vegetables consumption are associated with a higher risk for chronic disease, such as obesity, cardiovascular disease, and some cancers (2). There are several factors that may contribute to lower fruit and vegetable consumption among low-income individuals, such as availability/convenience, quality, selection, and cost (3). There have been few studies regarding the issue of access in relation to fruit and vegetable consumption. However, one notable study examined the impact of the introduction of two farm stands in low-income communities on fruit and vegetable intake, and a significant increase in the consumption of produce was observed (4). This study is important because the results indicate that access alone may improve dietary intake. The YMCA Veggie Van is a program with similar aims, but with a larger reach at multiple locations throughout two cities. The objective of this study was to characterize the individuals utilizing the Veggie Van in low-income areas of Grand Rapids and Muskegon, MI including food security status and fruit and vegetable servings of participants. It is hypothesized that participation in the program will meet or exceed fruit and vegetable daily serving recommendations (7-9 servings/day), as the program provides affordable produce by participation with initiatives such as Double-Up Food Bucks, SNAP, and WIC.

Methods

Subjects

Residents in Muskegon and Grand Rapids, MI purchasing food from the low-income sites of the YMCA Veggie Van.

Measurements

Fruit and Vegetable Servings

From six participants, three 24-hour recalls were collected using the Nutritional Data System for Research (NDSR) software. No calls were made 2 days before or after a major holiday as dietary intake often changes during these periods.

Demographic, Food Security and Food Assistance

Five participants completed a survey which collected information on gender, ethnicity, income, food security status, and participation in nutrition assistance programs.

Anthropometrics

Eight participants had their heights, weights, and waist circumference measured at the time of consent.

Analysis

Data analyses were performed with SAS (version 9.2; SAS Institute, Cary, NC).

Results

The mean BMI (kg/m²) (SD) for all participants was 31.6 (8.3) and the mean waist circumference was 42.5 inches.

The median fruit and vegetable (excluding white potatoes) servings of participants that completed the 24-hour recalls was 1.44 (IQR 0.56, 1.46) and 1.46 (IQR 93, 2.83).

Conclusions

Individuals utilizing the YMCA Veggie Van are consuming below the recommended servings of fruit and vegetables. However, a study in low-income individuals found a similar intake with 1.1 and 1.2 mean servings of fruits and vegetables (5). We are unable state the impact of Veggie Van on fruit and vegetable intake as this was a cross-sectional study. The YMCA Veggie Van does appear to be reaching the targeted low-income population. A limitation of this study was the inability to enroll non-English speaking Veggie Van participants and this may have contributed to the low number of respondents. We recommend future research with the Veggie Van to include surveys translated into Spanish to reach the Hispanic population.

Literature Cited


Acknowledgements

A special thank you to Christine Ellis for her input in the development of the project, YMCA Veggie Van Staff for their support, and the FAIM team for their assistance in data collection.

IRB Approval

IRB approval was obtained through the Grand Valley State University Human Research Review Committee.

Project Title: [359233-3] Examining Disparities in Food Access and Enhancing the Food Security of Underserved Populations in Michigan