

VeggieRx: Improving Health Through Local Produce

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ABSTRACT

The consumption of fruits and vegetables is strongly associated with a reduction in cardiovascular disease factors and all-cause mortality, including cancer.^{1,2} In general, programs dedicated to increasing the accessibility of farmer's markets to lower income families have been shown to increase fruit and vegetable consumption.^{2,3,4} In 2019, VeggieRx implemented a similar program that demonstrated increased produce consumption and improved BMI scores.⁵ For this study, a total of 50 individuals were enrolled (33 females and 17 males), and baseline health and social statistics were recorded. Participants were given a booklet of VeggieRx vouchers in the equivalent of 10 dollars per single/couple, or 20 dollars per family weekly for 6 months to be used at designated farmers markets. A pre- and post-survey were conducted to evaluate the participants progress over the 6-month time frame. Currently, there are very few programs that utilize this voucher system, prescribed by physicians, to increase the exposure of patients to produce sold at farmer's markets. This study helps provide a potential framework for other communities to implement similar programs.

OBJECTIVE

To increase plant-based food consumption, improving healthy eating habits for individuals experiencing food insecurity and/or chronic illness in the Umpqua Valley, and help to provide a potential framework for other communities to implement similar programs.

INTRODUCTION

Obesity and diet related illness pose a major health challenge in the United States. As of 2018, 42.4% of Americans were obese.⁶ Additionally, one study noted that Roseburg, OR has 6.5% more obese adults than the state average.⁷ Today, heart disease, cancer, stroke, and diabetes rank among the leading causes of death; all of which can be delayed and even prevented through lifestyle modification.⁸ Aiming to target the nutrition component of lifestyle modification, this 6-month concurrent program was devised to reach individuals suffering from food insecurity in and around the Umpqua Valley. In a report published in March 2019, it was noted that Umpqua valley residents suffered 1.5% greater unemployment rates than those of Oregon at large. With this in mind, inclusion criteria were set to access the most food-insecure participants within the participating clinics. Qualifying patients were given a packet of VeggieRx vouchers that they could then redeem for fresh, whole fruits or vegetables at participating local farmers' markets. VeggieRx participants also received additional educational materials related to nutrition and wellness during enrollment, through support at the voucher redemption sites, and on concluding the project. We hope that our program will assist in combating diet-related chronic disease and food insecurity in the Umpqua Valley.

STUDY DESIGN

Inclusion Criteria:

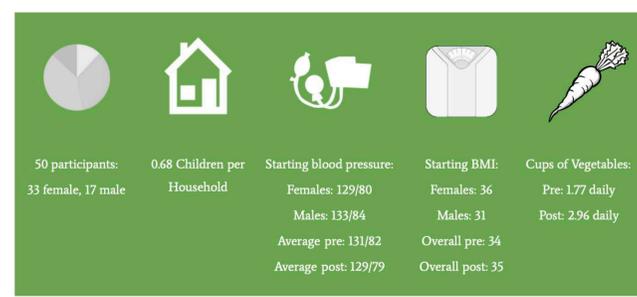
1. Adult living in Douglas County
2. Food insecurity as defined by answering always true or sometimes true to one of the following questions:
 - a. Within the past 12 months, we worried whether our food (including fruits or vegetables) would run out before we got money to buy more.
 - b. Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.
3. Interested in eating more fruits and vegetables
4. Able to get to the Umpqua Valley Farmer's Market on Saturdays or Canyonville Farmer's Market on Wednesdays or the Downtown Market at 741 SE Jackson St open every day.
5. Consents to participate in the pre- and post-survey

Community members who met the above inclusion criteria were enrolled by student and clinic staff. Enrollment included consent, pre-survey data and instructions on how to redeem vouchers. Approximately 43 adult singles/couples and 7 families (a family is defined as 3 or more individuals living in the same household) were enrolled. Health metrics including, blood pressure, height, weight, and BMI were tracked between the two time points. Vouchers of \$120 (\$10/wk) and \$240 (\$20/wk) worth of \$5 vouchers were provided for singles and families, respectively. The vouchers were dispersed in two increments, once on enrollment (May) and once halfway through the study (July), to ensure that participants visited the farmers' market in order to redeem their vouchers and obtain support from the UC-VEG staff. Three farmers' markets were selected for this study, bearing their locations, hours of operation and bus-accessibility to provide an array of options for the participants. Downtown Market, Umpqua Valley Farmers' Market, and Canyonville Farmers' Market agreed to participate in the program and UC-VEG provided volunteers to educate the community. After 6-months (October), health metrics and post-surveys were conducted. Participants were offered a final \$20 voucher on completion of the program.

RESULTS*

Preliminary Data Noted that:

- 85% participants said that fruits and vegetables were "too expensive"
- 79% participants report eating less than 3 cups of fresh produce a day
- 74% participants use SNAP
- 76% Strongly Agree/Agree to being able to cook/prepare fresh produce
- 64% participants admit to skipping meals in the last 12 months (4 unsure, 14 no)
- Updates: 50%of participants have not picked up their 2nd round of vouchers



*The data for this study has not yet been finalized, but initial data will be noted here

DISCUSSION

The evidence is clear, increasing intake of fruits and vegetables helps to prevent heart disease, cancer, and diabetes some of the leading causes of death in the United States.⁸ Programs dedicated to increasing the accessibility of farmer's markets to lower income families have been shown to increase fruit and vegetable consumption.^{1,6,8} Cavanagh et. al. conducted a VeggieRx program in 2016 where they found that vegetable incentive programs lead to decreases in BMI among other benefits.² Though the data has not been finalized, the initial reports from this VeggieRx project are on trend to demonstrate similar benefits to the Umpqua Valley Community as well as total weight, blood pressure and BMI reduction. Some barriers to access that have already been identified include adherence, accessibility, and affordability. What should be noted is that this study took place during some of the peak months of the COVID-19 pandemic, forcing participants to limit their exposure to others and potentially not visit the famers' market as often as they may have under different circumstances. There were also two of the largest forest fires that Oregon has suffered to date during the study, potentially affecting produce quality and quantity, vendor participation in farmer's markets, and accessibility to farmers' markets given the poor air quality, among other factors. It should also be noted that this already vulnerable population may not have had the means that prior VeggieRx participants may have had to supplement their vouchers due to fluctuations in income-earning opportunities during this time. In response to this, we hope to investigate the literature on similar effects during COVID-19 and natural disasters to draw together potential recommendations for the continued pursuit of preventative medical care in such an unprecedented time for our planet.

Other questions we hope to investigate include ways to increase fruit and vegetable consumption in an affordable and accessible way, how to encourage patients to incorporate whole foods into their diet, what motivational interviewing strategies have proven most successful and what resources should be available to program participants to empower them to succeed in the program.

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