CCDP: Worksite CVD Risk Reduction

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Abstract

The average person devotes over 90,000 hours in a lifetime to their employment (Pryce-Jones, 2010). The workplace can be a very effective environment to incorporate healthy interventions to achieve and maintain a healthy lifestyle. The Community Chronic Disease Prevention (CCDP) intervention, focused on adopting a nutrient-dense, whole-food, plant-based (NDWFPB) dietstyle to reduce the risk of developing Cardiovascular Disease (CVD). The participants were recruited from the working adult population at Northern Arizona University (NAU), Flagstaff Medical Center (FMC) & Verde Valley Medical Center (VVMC). This intervention demonstrated effective CVD risk reduction.

Introduction

We examined the relationship between diet and cardiovascular health. Pre and post biometric screenings were conducted. The span of the study was 12-weeks, that included an initial 6 hours of immersion into the material and plan of the study. Weekly meetings were held to deliver nutrition education through lectures and guest speakers to support the participants.

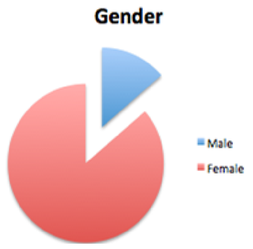
The following pre and post blood values were evaluated: Total Cholesterol (TC); Triglycerides (TRIG); High-Density Lipoprotein/Total Cholesterol (HDL/TC Ratio); High-Density Lipoprotein (HDL); Low-Density Lipoprotein (LDL); Very Low-Density Lipoprotein (VLDL); High Sensitivity C-Reactive Protein (hs-CRP); Systolic Blood Pressure (SBP); and Diastolic Blood Pressure (DBP). Our overall goal for this 12-week intervention was to assist and support these employees and their spouses in reducing their risk of diseases by maintaining a NDWFPB dietstyle, which has been proven to protect against many chronic diseases including CVD.

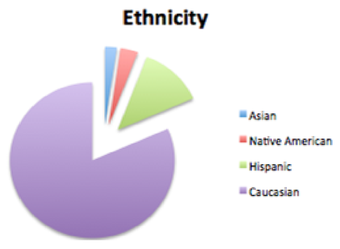
Methods

Participants: Seventy three employees and/or spouses of NAU, FMC, and VVMC, above the age of 18. All participants had a waist circumference of >35" for females and >40" for males with a BMI of 28 or greater. Average Age: 48.11 years old.

Procedures: This intervention utilized the health belief model. We combined 20 plus hours of in-person lecture, take home materials, and guest speakers to support the study. Participants followed a dietary plan consisting of plant-based, whole-foods including: vegetables, fruits, nuts, seeds, whole grains, and legumes. Processed foods and animal products were to be limited according to the level of adherence they chose to follow, for the study.

Data Collection: The participants also recorded their dietary adherence weekly. We provided pre and post biometric screenings for all participants which included their weight, waist and hip measurements, blood pressure, and blood draws.

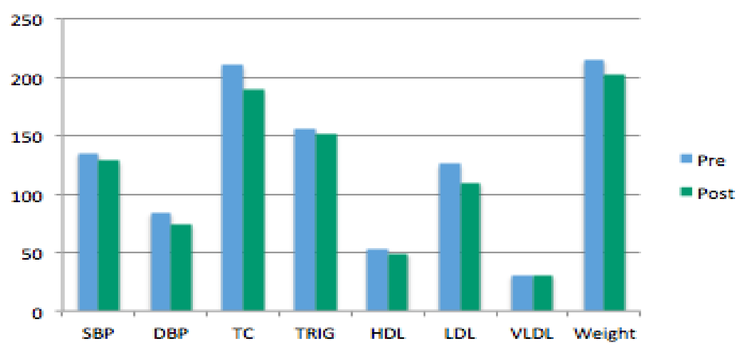




Results

After the intervention, participants showed significant improvement in a majority of their measurements. The results showed a reduction of 5.1% for SBP and 11.8% for DBP. There was also an average reduction in TC by 9.8% , as well as a 12.69% reduction in LDL.

Table #1

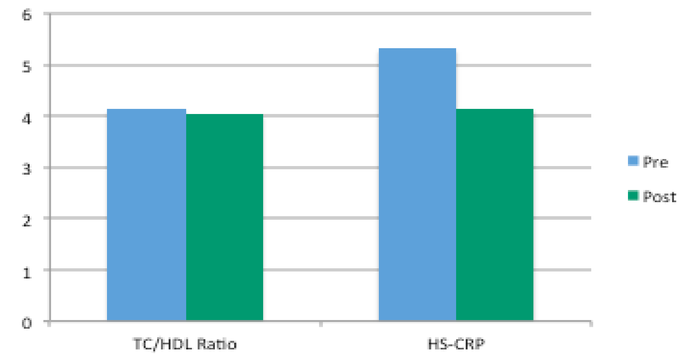


Results - continued

Other meaningful results include; group total weight loss: 970.17 lbs; group total waist reduction: 192.72"; group total hip reduction: 123.37"

The graph below shows the pre and post data results for TC/HDL Ratio and hs-CRP. There was a 2.42% reduction in the TC/HDL Ratio. There was a 22% reduction in hs-CRP.

Figure #1



Discussion & Conclusions

By adhering to the NDWFPB dietstyle, the participants were able to reduce their overall CVD risk. Of most importance was the reduction of hs-CRP. Elevated hs-CRP is positively correlated with CVD. hs-CRP level measurements are used to identify long term risks of CVD and other diseases. It acts as an independent risk factor for CVD and can be an accurate predictor in many types of cardiovascular events due to its appearance during acute and chronic inflammation. In addition, a reduction in circulating hs-CRP decreases a person's risk of stroke, diabetes mellitus, cancer, as well as progressive brain disorders such as Alzheimer's and Parkinson's (Sutliffe, 2015).

This intervention has proven to be efficacious and immediate in reducing CVD risk factors. Widespread worksite implementation should be considered.

References

Pryce-Jones, J. (2010). Happiness at Work: Maximizing your psychological capital for success.Wiley.

Sutliffe, J., Wilson, L., de Heer, H., Foster, R., & Carnot, M. (2015). C-reactive protein response to a vegan lifestyle intervention. *Complementary Therapies in Medicine 23, 32-37.* http://dx.doi.org/10.1016/j.ctim.2014.11.001

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