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Title

The Food Costs of Healthier Eating: a Post-Hoc Analysis of a Diabetes Intervention using Plant-Based Diets

Priority 1 (Research Category)

Obesity, exercise and nutrition

Presenters

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Abstract

Context: Americans fall short of dietary recommendations, which has contributed to the increasing prevalence of obesity and diabetes. The higher cost of purchasing healthier food is commonly cited as a barrier to adopting healthier diets. Recruiting adults with insulin-treated type 2 diabetes, we conducted a non-randomized crossover trial with meals provided utilizing two ad libitum diets: Dietary Approaches to Stop Hypertension (DASH) and whole food, plant-based (WFPB), and had dietary intake data from baseline and both intervention diets for all participants. Objective: Using actual diet records, we analyzed food costs of baseline diets of adults with type 2 diabetes (T2DM) as well as therapeutic DASH and WFPB diets. The diets were ad libitum. Participants were encouraged to eat as much as they wanted to be comfortably full, as often as they wanted. Study design and Analysis: Post hoc descriptive analysis of food costs in a nonrandomized crossover trial intervention. Costs were analyzed using linear mixed effect models as a function of diet. Intervention/Instrument: 3-day food records were collected and analyzed for each 7-day diet phase: baseline, DASH, and WFPB. Nutrient content was analyzed using Nutrient Data System for Research (NDSR) and cost was determined using Fillet, an application to manage menu pricing. Outcome Measures: Food costs were calculated for each diet as consumed and adjusted to a standardized 1800 kcal/day. Ingredient only costs of food away from home (FAFH) were approximated and analyzed. Results: Fifteen subjects enrolled; 12 completed all dietary phases. The baseline, DASH, and WFPB diets, as consumed, cost \$15.72/day (95% CI; \$13.91, \$17.73), \$12.74/day (\$11.23, \$14.25), and \$9.78/day (\$7.97, \$11.59), respectively. When adjusted to an 1800 kcal/day intake, the baseline, DASH, and WFPB diets cost \$15.69/day (\$13.87, \$17.52), \$14.92/day (\$13.59, \$16.26), and \$11.96/day (\$10.14, \$13.78), respectively. When approximated ingredient only costs of FAFH were analyzed, as consumed baseline (\$11.01 (\$9.53, \$12.49)) and DASH diets (\$11.81 (10.44, \$13.18)) had similar costs; WFPB diet (\$8.83 (\$7.35, \$10.31)) cost the least.

Conclusions: In this short-term study with meals provided, the food costs of plant-predominant diets offering substantial metabolic health benefits were less than or similar to baseline food costs of adults with insulin-treated T2DM. Longer-term data without meal provision are needed for more generalizable results.

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