Shahar (continued)

with replacing foods with a high environmental burden. Statistical analyses using the R package included ANOVA and Pearson’s Chi-squared test for comparing dietary intake and environmental footprint values by tertiles of MED adherence.

Results: The highest tertile of adherence to the MED [average score=5.4±0.07, range 5-7] was associated with the lowest greenhouse gas emissions (GHGe) and land use, and higher water use. Meat consumption was associated with the greatest contribution [27%] to land use, dairy contributed the most [25%] to GHGe, and fruits and vegetables contributed the most to water use [30%]. Higher adherence to the MED was associated with 30% lower GHGe. Changes in the diet indicate GHGe reductions [-50—98%] following replacement of high environmental burden food items (eg, replacing beef with chickpeas).

Conclusion: Animal protein constitutes the largest component of land use and GHGe, while fruits and vegetables are associated with the largest amount of water use. High adherence to MED was related to a reduction of land use and GHGe. Replacing animal protein with plant-based protein may constitute a flexible strategy in reducing GHGe and land use.

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Virtual Vegan Culinary Medicine Randomized Crossover Trial Improves Diet Quality in Patients at Risk for Heart Disease

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Background: Dietary risk factors contribute to over half of all deaths resulting from cardiovascular disease (CVD), the leading cause of mortality and morbidity worldwide. Relationships between diet intake and CVD can be assessed by diet quality indices (DQIs). While higher diet quality is typically observed in vegetarian diets compared to standard omnivorous patterns, improving diet quality among communities remains challenging. We hypothesized a plant-based culinary medicine (CM) intervention may enhance adoption of a healthful dietary pattern.

Objective: To determine changes in diet quality in clinical patients after participating in a vegan CM intervention.

Study Design, Settings, Participants: In a randomized crossover clinical trial, adults at risk for CVD recruited from medical clinics were assigned to follow two vegan diet patterns either high (4 tablespoons/day) or low (<1 teaspoon/day) in extra virgin olive oil (EVOO) for 4 weeks each, separated by a 1-week washout period. Participants were asked to complete 5-7 consecutive days of dietary recalls assessed by the Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24®) at baseline and during each diet period. Weekly virtual CM group cooking classes coincided with both diet phases.

Measurable Outcome/Analysis: Diet recalls were analyzed to confirm diet compliance and calculate Whole Plant Food Density (WPFD) DQI and subcomponents. Paired t-tests compared differences from baseline and between diets.

Results: Of 40 participants (75% female, BMI 32.7±7 kg/m², 64±8 years mean±sd), WPFD increased from 2.93±1.48 cup/oz-equivalents per 1000 kcal pre-intervention to 4.96±1.37 and 6.41±2.05 cup/oz-equivalents per 1000 kcal during the high and low EVOO phases, respectively (p<0.0001). All subcomponents (whole grains, legumes, whole fruit, vegetables, and nuts/seeds) significantly increased compared to baseline (p<0.001).

Conclusion: Participation in a virtual vegan CM intervention increased diet quality through greater intake of whole plant foods. Enhanced diet quality may reduce CVD risk factors (reported elsewhere), which correlate to measures of WPFD. Beneficial findings warrant further research on the use of WPFD as a DQI and CM for supporting nutritional adherence in diverse populations.

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What’s Your Weekly Special? Impact of the COVID-19 Pandemic on Grocery Store Promotions

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Background: Grocery store sales circulars are used to advertise products and promote seasonal sales. Further, food marketing has been shown to influence eating behavior. Time of year and current events influence which items stores include in their sales circulars, particularly on the front page. Dietary habits were impacted by the COVID-19 pandemic and shutdown. What is unclear is how the COVID-19 pandemic affected item promotion at the grocery store.

Objective: The goal of this study was to identify changes in food promotions seen during the COVID-19 pandemic by analyzing sales circulars from a prominent midwestern grocery store chain.

Study, Design, Participants: Two researchers analyzed the front page of sales circulars over a two-year period, including one year prior to the start of the COVID-19 pandemic through the first year of the pandemic to assess potential changes in food being promoted. All items on page one of each circular were coded. Throughout the coding process, the researchers met regularly to clarify and find consensus on codes.

Measurable Outcomes/Analysis: Items were classified in several ways including timing in relation to the COVID-19 shut-down, MyPlate group, and consumption category (eg, entree, beverage). Simple descriptive statistics and the chi-square statistical test were used to analyze the data.

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Results: The number of advertised items included on the front page of store circulars was not significantly different between pre-COVID shut down and post-COVID (or in the year following shut down; 45.1% vs 54.9%). There were just a few notable differences in items advertised between the two time periods. Significantly more beverages as well as significantly more non-MyPlate items were advertised post-COVID. Items classified as “proteins” were advertised significantly fewer times post-COVID.

Conclusion: The COVID-19 pandemic had minimal impact on how and what food items were being advertised on the front page of the grocery store circular. Changes that individuals made to their eating and food preparation habits during this time happened independently of the items being advertised for sale.

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Youth Sport Participation Influences Family Mealtime Behaviors

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Background: Organized youth sports are a popular and effective way to encourage children to be physically active. Family meals are associated with several health benefits, two of which are better diet quality and healthier weight status among youth. Preliminary studies suggest that children’s participation in organized sports may impede families’ efforts to regularly prepare and share an evening meal at home.

Objective: The objective of this study was to describe the frequency and location of family meals for youth recreational sport participants.

Study Design, Setting, Participants: An online survey was completed by parents (n=172) of current youth recreational sport participants, ages 8-12 years. Parents were recruited from four youth sport organizations, and youth represented 12 sports. Parents were primarily female (80%) and White (85%). Most parents worked full time (64%) and were from two parent households (89%). Referent youth were mostly male, and on average, 8 years old.

Measurable Outcome/Analysis: Descriptive statistics were used to determine household youth sport frequency and family meal frequency. These were measured with the following questions: “In the past 7 days, how many days did a child in your home have a youth sport game or practice?” and “In the past 7 days, how many days was dinner prepared at home and eaten at the table with your child?”, respectively. Influence of youth sports participation on family mealtime behaviors was also assessed.

Results: On average, children had either a game or sport practice on 3.5 days per week and families ate together on average 5.5 days per week. Over half of respondents reported that on evenings with sports they are more likely to eat fast food for dinner (58.4%) or order take out (59.7%) and less likely to take their time and not rush eating their meals (68.5%).

Conclusion: Despite the benefits of youth sport participation, increasing time commitments may alter eating habits in a way that increases risk for poor diet related health outcomes.

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SNEB Nutrition Educator Competencies: Behavior and Education Theory

Associations Between Food Insecurity, Dietary Intakes, and Health Parameters Among Mexican American and Other Hispanic Adults

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Background: Food insecurity has been adversely associated with nutrition and risks of obesity and chronic disease. These associations have been more notable among specific race and ethnic groups, however, they have received limited attention among nationally representative samples of Mexican American and Other Hispanic (MAOH) adults.


Study Design, Settings, Participants: A cross-sectional secondary analysis was completed using NHANES data (2011-2018) from adult MAOH participants (20-65 years), with reliable dietary recall status for 2 days of recall data, not pregnant or breastfeeding, at two food insecurity levels based on the US Household Food Security Survey Module where food secure: full food security (n = 1,549), and food insecure: marginal, low and very low food security (n = 1,396).

Measurable Outcome/Analysis: Linear regression models were used to examine associations between food insecurity, Healthy Eating Index (HEI)-2015 total scores, 2-day mean daily macro and micronutrient intakes, and health parameters adjusted for age, birth in the US, marital status, family income to poverty ratio, and kcalorie intake. Analyses were conducted with survey analysis procedures accounting for the complex survey design.

Results: Lower protein, total fat, saturated fat, and sodium intakes, and total protein servings consumed and higher carbohydrate and total sugars intakes and total grain servings consumed were associated with food insecurity. No associations were observed for HEI-2015 total scores (mean for all = 54.5). Higher body mass index and waist circumference measurements and HbA1c levels were associated with food insecurity.

Conclusion: In this national sample of MAOH adults, mixed results indicated that the food insecure group had lower intakes of nutrients of concern including total fat, saturated fat and sodium, and higher intakes of total sug-

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