ABSTRACTS

BEHAVIORAL HEALTH

The effects of acceptance and commitment therapy on eating behavior and diet delivered through face-to-face contact and a mobile app: A randomized controlled trial.

Jarvela-Reinjonen E, Karhunen L, Sairanen E, et al. *Int J Behav Nutr Phys Act.* 2018; https://doi.org/10.1186/s12966-018-0654-8.

Investigators compare effects of acceptance and commitment therapy (ACT) delivered via face-to-face group sessions and mobile app as related to diet among overweight adults with psychological distress. A secondary analysis of a parallel-arm Elixir randomized controlled trial was coordinated. A 219-participant sample was selected and recruited in Finland between August 2012 and January 2013. Inclusionary criteria were: ages 25 to 60 years; self-reported body mass index (BMI) of 27 to 34.9; a minimum score of 3/12 on the General Health Questionnaire for psychological distress. Exclusionary criteria included chronic illness; disabilities; pregnancy/breastfeeding within 6 months; recent psychotherapy; participation in other studies. At baseline, the sample was 85% female, mean age of 49.5 years, mean BMI of 31.3. The sample was randomized into 70 participants in the face-to-face trial, 78 in the mobile app, and 71 in the control. The face-to-face and mobile interventions used the same ACT program constructed by the same research group. The program was focused on: Value clarification and action; mindfulness; self-observation; and acceptance. The face-to-face group had six 90-minute group counselor-led sessions during the 8-week intervention. The mobile group had one group session that informed participants about ACT. Smartphones and apps were provided. The app contained 46 exercises in text/audio formats and videos. Height and weight, demographic information, and General Health Questionnaire scoring were taken at baseline. The 21-measure Intuitive Eating Scale, Three-Factor Eating Questionnaire, Health and Taste Attitude Scales, and the 24-item Regulation of Eating Behavior Scale measured eating behaviors. Participants completed food diaries throughout the 8-week program. The Perceived Stress Scale was used to assess the degree to which a person perceives life as stressful. Statistical analyses were performed using IBM SPSS Statistics version 21 (IBM Corp., 2012) and Mplus version 7.3 (Mplus, 2014). The authors report positive results on eating behavior in both intervention groups across multiple measures, with slightly stronger results coming from the face-to-face group.

BUSINESS & INDUSTRY

Changes in serving size, calories, and sodium content in processed foods from 2009 to 2015.

Clapp JE, Niederman SA, Leonard E. *Prev Chron Dis.* 2018; https://doi.org/10.5888/pcd15.170265.

The authors studied changes in serving sizes, calories, and sodium among top-selling processed foods in the United States in 2009 and 2015. A cohort study was designed to address this issue. A sample of 2,979 branded food products from 54 categories of processed food was established. The sample was derived from the National Salt Reduction Initiative (NSRI) Packaged Food Database. Selection criteria included the product being in the top 80% of a category's sales in each year, having complete nutritional information regarding serving sizes, and possessing a universal product code so as to be matched in both 2009 and 2015. Mean serving size in grams, calories per serving, sodium in milligrams per serving, and sales in equivalized units were calculated for 2009 and 2015 for the entire sample as well as by meta-category. Mean calorie and sodium content was calculated per 100 g food to establish density. The authors also determined the number of products in which serving size, calorie density, sodium density, and sales either decreased, increased, or remained stable. For each stratification of calorie density and sodium density, the mean serving size, calorie density, sodium density, and sales were calculated in each year along with percentage change. Statistical analyses were performed using SAS version 9.4 (SAS Institute, Inc., 2014). The authors report a decrease in serving size, calories per serving, calorie density, and sodium per serving as well as sodium density between 2009 and 2015 in the same products. A decline in sales was reported to have occurred regardless of the increase or decrease in calorie and sodium densities.

CLINICAL NUTRITION

Nutritional assessment of critically ill patients: Validation of the modified NUTRIC score.

de Vries M, Koekkoek W, Opdam M, et al. *Eur J Clin Nutr.* 2018; https://doi.org/10.1038/s41430-017-0008-7.

Investigators seek to validate the modified NUTRIC-score (mNUTRIC) in a Dutch intensive care unit (ICU) population, as reflected by mortality and duration of mechanical ventilation. A secondary objective was to compare the mNUTRIC score with the Malnutrition Universal Screening Tool (MUST) score. A single-center, retrospective cohort study was designed to address this. A 475-participant sample was used. Patient data were retrospectively collected from patients at a Dutch university-affiliated teaching hospital between July 1, 2011 and June 2013. Inclusionary criteria were: Adult critically ill patients over 18 years of age; noninvasive mechanical ventilation within 24 hours postadmission. Patients were excluded if the time between ICU admission and discharge was less than 24 hours; data on mNUTRIC variables were incomplete; pregnancy; and re-admissions from the ward to the ICU within the same hospital. The population was 43.3% female. Baseline characteristics were listed and selected at calculating mNUTRIC and MUST scores, age at admission, sex, primary admission diagnosis, admission type, comorbidities, Acute Physiologic Assessment and Chronic Health Evaluation (APACHE-II) score, Sequential Organ Failure Assessment (SOFA) score, duration in hospital before ICU admission, body mass index (BMI), weight loss over 3 to 6 months, and 5-day nutritional intake before admission. Mortality data were collected up to 28 days after ICU discharge from hospital records. The modified 9-point scale of the NUTRIC score was used and defined the cutoff points 0 through 4 as "low scores" and the points 5 through 9 as "high." The MUST score comprises BMI, weight loss in the 3 to 6 months before admission; acute illness; and nutritional intake in days before admission. The authors defined MUST scores greater than 1 as high nutritional risk. In the statistical analysis, authors defined patients alive after 28 days post-ICU as survivors and those who died as nonsurvivors. Baseline characteristics between the groups' survivors and nonsurvivors were tested. IBM SPSS

statistics for Windows version 19.0 (IBM Corp, 2010). The authors report that 25.5% of patients (n=121) died within 28 days after ICU admission. The mNUTRIC score reportedly showed a sensitivity of 88.4% and specificity of 48.9% with a positive and negative predictive value of 37.2% and 92.5%, respectively.

CONSULTATION & PRIVATE PRACTICE

The Nutrition Literacy Assessment Instrument is a valid and reliable measure of nutrition literacy in adults with chronic disease.

Gibbs H, Ellerbeck E, Gajewski B, et al. *J Nutr Educ Behav*. 2018;50(3):247-251.

Authors measure the validity and reliability of the Nutrition Literacy Assessment Instrument (NLit) among primary care patients with chronic nutrition-related illnesses to measure associations with diet quality. A cross-sectional study was designed to address this. A 429-participant sample was established. The sample was 72% female, with a mean age of 54 years. The sample was 58% white, 36% African-American, and 6% identified as "other,"

with a mean body mass index (BMI) of 34.9. The group was 30% diabetic, 56% with hypertension, 45% with hyperlipidemia, and 84% overweight/obese. Participants were recruited at an urban university medical center in the Midwest between January 2015 and July 2016. Eligibility criteria included being over 18 years of age, fluent in English, with a self-reported diagnosis of diabetes, hyperlipidemia, hypertension, or overweight/obesity. Exclusionary criteria were psychiatric illness, visual problems that could interfere with the study, cognitive impairment, or body weight exceeding 500 pounds. The NLit is a survey designed to assess print literacy and numeracy within nutrition contexts and the capability to apply nutrition knowledge and skills. The NLit was offered in print and online based on preference. Participants were measured at the clinic for height and weight, and they completed a demographic survey and Diet History Questionnaire II. Diet quality was measured using the Healthy Eating Index−2010. Participants were then re-administered the NLit at a second visit 1 month later. The authors examined the test−retest reliability and stability of survey items to determine whether questions received the same answers after 1 month from the same people, using both Pearson correlation and the intraclass correlation

coefficient. Statistical analyses were performed with Classical and Bayesian Instrument Development software. The authors report that the NLit demonstrated substantial factor validity and reliability, 0.97; and rest−retest reliability, 0.88. Nutrition literacy was observed to be the most significant predictor of diet quality.

DIABETES CARE

The interpretation and effect of a low-carbohydrate diet in the management of type 2 diabetes: A systematic review and meta-analysis of randomized controlled trials.

Huntriss R, Campbell M, Bedwell C. *Eur J Clin Nutr*. 2018; https://doi.org/10.1038/s41430-017-0019-4.

The authors investigate the clinical effect of a low-carbohydrate diet in the management of type 2 diabetes. A systematic review and meta-analysis were designed to address this. A sample of 18 studies was established for a qualitative synthesis, with six included in the quantitative meta-analysis. The studies included in the review represented 2,204 participants, with randomization and data analyzed for 1,937, because some attrition