Nominations for 2023 Election!

The Academy and Commission on Dietetic Registration Nominating Committees are accepting nominations for the 2023 national election.

The committees are seeking leaders with visionary skills to further the profession and the Academy’s strategic direction.

Nominations for the positions of president-elect, speaker-elect, and treasurer-elect close September 2, 2022. Nominations for all other positions (below) are due by October 24, 2022.

2023 Election Positions (All positions are three-year terms, unless noted below)

**Board of Directors**
- President-elect (one position)
- Treasurer-elect (one position)
- Director-at-Large (one position)
- House of Delegates Speaker-elect (one position)
- House of Delegates Director (one position)

**Nominating Committee**
- National Leader (two positions)
- Leader with Board of Directors Experience in the Past 10 Years (one position)

**House of Delegates**
- At-Large Delegate: Nutrition and Dietetics Technician, Registered (NDTR) (one position)

**Commission on Dietetic Registration**
- Registered Dietitian Nutritionist (RDN) (three positions)
- CDR Advanced Practitioner in Clinical Nutrition Representative (RDN-AP) (one position)

For more information regarding nominations and the election, and to access the online nomination form, please visit www.eatrightPRO.org/elections
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Sunday, October 9

Poster Sessions
Attending a Pre-Op Class with a Nutrition Component Taught by a Registered Dietitian Nutritionist Increases Patients Perioperative Protein Intake

Author(s): C. Riedel1, K. Venezia2; 1UPMC St. Margaret, 2University of Pittsburgh

Learning Outcome: Upon completion, participants will be able to describe the benefits of increased protein intake on surgical outcomes and integrate that knowledge into increased protein intake at home perioperatively.

Poor perioperative nutrition, especially reduced protein intake, is known to increase the risk of surgical complications including delayed wound healing and surgical site infections. Nutrition education is a component of many ERAS (enhanced recovery after surgery) programs. To improve the nutrition status of patients undergoing a total joint replacement (TJR), a Registered Dietitian Nutritionist (RDN) was added in February 2021 to a pre-op instructional session which patients are strongly encouraged to attend. 1,057 patients underwent a TJR between February 2021 to December 2021, with 548 (51.2%) of these patients attending the pre-op session. All patients received some nutrition information as part of a pre-op packet at the time of their surgery scheduling. To determine if taking the class increased protein consumption among patients, 30 patients who attended the class and 24 patients who did not attend the class were surveyed. 90% of patients who took the class increased their protein intake in some way, while 58% of patients who did not take the class increased their protein intake. Mean daily added protein from oral nutritional supplement drinks or bars was 21.9g (range 0-62.5g) in session participants versus 9.7g (range 0-60g) in patients who did not participate in the class. This suggests patients who take the class with an RDN have a better understanding of the importance of nutrition on healing and actively take steps to improve their nutrition status. This class is currently offered in-person 4 times per month with upcoming plans to add a monthly live webinar.

Funding source: There are no grants or additional funding associated with this program. Handouts and samples of products are paid for through the Total Joint Care Center as part of its operating costs.

Collaborative Effort to Standardize Terminology and Specification of Texture Modifications and Ensure High Quality Foods by Implementing The International Dysphagia Diet Standardization Initiative (IDDSI) System Wide


Learning Outcome: Upon completion, participants will be able to describe the contribution of each healthcare professional to drive change and have a positive impact on patient safety with the implementation of IDDSI.

Integration for the International Dysphagia Diet Standardization Initiative (IDDSI) started in 2018 at test facilities. Clinical nutrition leaders partnered with speech language pathologists, executive chefs, culinary council, and outside vendors to select foods and individualize menus to remain within the enterprise’s vision and commitment of providing healthy, healthy, and sustainable foods, aesthetically pleasing, and focused on local and seasonal offerings. The clinical transformation team was engaged for strategic planning; best practices and troubleshooting challenges were shared in monthly meetings. Three IDDSI food texture tests were performed: Fork Test, Spoon Tilt Test, and Fork Pressure Test on about 300 items to map foods into Easy to Chew, Soft/Bite-Sized or Minced/Moist diets. Production methods and recipes were modified for palatability, compliance with particle size, moisture content, and stickiness. Audits are ongoing to ensure accuracy and compliance with IDDSI standards. Pre-launch training online education IDDSI modules were developed with speech. Information technology designed presentations using QR code to assure education accessibility for over 3,000 interdisciplinary health professionals, including physicians, nurses, nurse-assistants, and culinary staff. Electronic health record diet order changes and training spanning 90 days concluding with transition from the National Dysphagia Diet to the IDDSI framework launched October 28, 2021, in twenty-three Northwell facilities. Post-launch lasted four weeks with minimal troubleshooting required. IDDSI implementation demonstrates a system effort ensuring safety and high-quality food for texture modified diets. Interdisciplinary collaborative coordination was instrumental for continued provision of healthy and sustainable foods and achieving success in delivering safe and effective nutrition standards.

Funding source: Northwell Health

Development of a Culturally Pictorial-Based Food Exchange System: An Innovation for the Registered Dietitian Toolbox in Malawi

Author(s): G. Mphwanthe1, L. Weatherspoon2; 1 Lilongwe University of Agriculture and Natural Resources (LUANAR), 2Michigan State University

Learning Outcome: Upon completion, participants will be able to use a pictorial-based food exchange system (PFES) that integrates culturally acceptable and commonly consumed foods for diabetes education and counseling in Malawi.

Diet-related non-communicable diseases such as type 2 diabetes (T2DM) are rising and a significant threat to Malawi’s public health. A recent mixed-method study found that over 60% of T2DM adults had elevated glycosylated hemoglobin (A1C, >8%). The current project builds upon the author’s previous work which elucidated that the dietary quality of T2DM adults in Malawi was poor and that the critical missing piece to enhance the nutrition care process is a culturally appropriate and standardized diet education and counseling tool such as a pictorial-based food exchange system (PFES). The objective was to develop a PFES that reflects traditional foods and dishes commonly consumed in Malawi to increase understandability and readability, considering Malawians’ limited nutrition and food literacy. Based on the authors’ previous findings and local recipe books, frequently consumed foods and dishes were prepared and portioned using standardized utensils such as cups and spoons, pictures were taken and nutrient values were determined from the Malawi Food Composition Table and other sources. Malawi’s six food groups, food/dish net weight per serving, energy, and macronutrient content were emphasized. Expert review by 10 dietitians showed that the PFES was well received. Current work is being expanded with supplemental funding to include more foods and dishes based on seasonal and food system changes, and to develop a mobile app of the PFES for ease of use by dietitians and nutritionists in different settings.

Funding source: This material is based upon work supported by United States Agency for International Development, as part of the Feed the Future initiative, under the CGIAR Fund, award number BFS-G-11-00002, and the pre-decessor fund the Food Security and Crisis Mitigation II grant, award number EEM-G-00-04-00013.

Dietetic Interns Teaching Practical Nutrition and Cooking Tips to Medical Students

Author(s): M. Torres1, S. Ahmed2, E. Ireland3, E. Johnston4; 1California Health Sciences University, 2Fresno State Dietetic Internship, 3California State University, Fresno

Learning Outcome: Upon completion, participant will be able to describe at least one strategy to enhance interprofessional communication among health professions trainees.

Nutrition is foundational to chronic disease prevention and management. Registered Dietitians are uniquely positioned to administer nutrition interventions and physicians can support these interventions through discussion of nutrition with patients and referrals for medical nutrition therapy. In the absence of curricular standards for nutrition in medical education, faculty at a college of osteopathic medicine partnered with a local dietetic internship to incorporate dietetic interns into the Culinary Medicine Workshop, training on evidence-based lifestyle interventions complemented by practical information on food selection/preparation. Dietetic interns completed brief surveys after their rotation on their confidence communicating with physicians. Here we report implementation and preliminary findings of a video project, designed to allow for interprofessional education within the pandemic-restricted learning environment. Dietetic interns planned and recorded a total of six nutrition-education videos, all under 6 minutes long, that were shared with preclinical medical students and included pre and post-test questions to check for understanding. A total of 200 first year medical students received access to these videos. The video “Salt-free Seasonings”, included as a component of the Renal System course, was viewed/downloaded 109 times by 75 unique users; 55 students completed the pre and post-test. Nearly 62% of students showed improvement in knowledge after watching the five-minute video. Results of other videos are still under review. Preliminary findings from dietetic intern surveys suggest this was a positive experience and enhanced confidence in communicating nutrition information to a physician. This project allowed for interprofessional communication and education during the global pandemic.

Funding source: None
Emerging Sciences in Precision Medicine

**Author:** D. Fleming; University of Southern California

**Learning Outcome:** Upon completion, participants will have a greater understanding of diagnostic tools used in Medical Nutrition Therapy relating to nutrigenomics/nutriomics and metabolomics.

**Objective:** To educate healthcare practitioners about various diagnostic tools used in precision medicine.

**Summary:** Precision medicine is an emerging field within the realm of functional medical nutrition therapy (MNT). Recent advancements in science have spawned the development of various diagnostic tools allowing more personalized nutrition interventions. In 2003, the 13-year Human Genome Project (HGP) culminated with the full sequencing of the human genome, rendering the data set complete [1]. In 2004, the Human Metabolome Project (HMP) was launched to identify all human metabolites; there are currently 2,000 metabolites in the Human Metabolome Database (HMDB) and the number continues to rise [2,3,4,5,6]. This presentation explores two categories of emerging interest (genomics and metabolomics) and discusses three popular diagnostic approaches in MNT: urinary metabolites, stool analysis and nutrigenomics/nutriomics.

**Funding source:** None

Lite to Fight Weight Loss Intervention Program

**Author:** B. Hyatt; Lynn Cancer Institute

**Learning Outcome:** Upon completion participants will be able to describe the weight loss program intervention.

**Background:** Breast cancer survivors (BCS) may gain weight during breast cancer treatment. Aromatase inhibitors (AI), typically taken after breast cancer treatment may also contribute to weight gain. Indirect Calorimetry (IC), can accurately estimate caloric needs with less of an error margin. The Lite to Fight (L2F) Weight Loss Intervention includes personalized medical nutrition therapy (MNT) inclusive of IC results.

**Methods:** L2F has enrolled 12 BCS since October, 2021. Oncologists refer BCS who have completed treatment, and met eligibility criteria, to the program. Estimation of caloric needs for weight loss are compared between: Mifflin St. Jeor (MSJ), Indirect Calorimeter (IC) reading, and Bioimpedance scale (BIS) measurements. Participants meet weekly for 10 weeks to review nutrition topics, diet and exercise goals, weight trends, motivation levels and exercise participation.

**Results:** Weight loss was successful in 75% of the BCS who finished the program (n = 4, M = 53), and 100% of all enrollees are taking an AI. Upon comparison of the estimation of caloric needs, IC results were 3-17% higher caloric estimation than the MSJ and BIS results were 12-28% higher caloric estimations than the MSJ and 4-21% higher than IC results.

**Conclusions:** The sample size needs to be larger before conclusions can be determined. Applications Weight loss management is a challenging aspect of MNT. BCS face challenges that differ from other oncology populations. This intervention strives to offer valuable tools to improve the quality of life in the growing breast survivorship community by guiding these BCS towards their weight loss goals.

**Funding source:** This intervention program is a part of Lynn Cancer Institute’s Support Services Department. There was no additional money received towards the intervention.

Malnutrition Quality Improvement in Cancer Centers: Moving Beyond Diagnosis

**Author(s):** E. Kenny, L. Russo, C. Stella, C. Kim, B. Jordan, P. Adintori; Memorial Sloan Kettering Cancer Center

**Learning Outcome:** Describe the components of a comprehensive malnutrition quality improvement program.

**Background:** Malnutrition in patients with cancer is an often-underreported complication during cancer treatment, cancer centers to focus on diagnosis of malnutrition and lose sight of the larger picture. Memorial Sloan Kettering Cancer Center (MSK) created a quality improvement (QI) program to evaluate a standardized malnutrition documentation program (MDP) in the inpatient setting. This program includes documentation compliance, program impact and value, hospital metrics, and clinical outcomes.

**Methods:** Implementing a MDP at MSK included the formation of an interdisciplinary team, updated adult screening tool to the validated Malnutrition Screening Tool (MST), and revision of clinical documentation to include the Academy/ASPEN indicators (A AIM) in the inpatient setting. Current metrics include documentation (compliance to MDP and malnutrition metrics), hospital metrics (measured through severity of illness indices), and dietitian referrals generated from the MST.

**Results:** To date, 20% of inpatients have been documented as malnourished. The increased documentation of malnutrition has contributed to increased severity of illness metrics impacting both length of stay (2018 = 1.78 vs 2021 = 1.15) and mortality indices (2018 = 2.00 vs 2021 = 0.97). Of those screened and admitted, 19.7% had an MST score of >2. Data collection is ongoing for other program domains.

**Conclusion:** MSK has successfully implemented a MDP with increased identification of malnutrition, improved documentation of severity of illness of patients, and timely referrals to RDs. The QI program will continue to collect and report on metrics including nutrition and clinical outcomes, staffing needs, and intervention optimization for those diagnosed with malnutrition.

**Funding source:** None
### Restaurant-based Healthy Eating Program and Other Factors Influence Customer Food Choices in New Orleans, Louisiana

**Author(s):** M. Knapp<sup>1</sup>, T. Moore<sup>2</sup>, J. Lockhart<sup>3</sup>, A. Lederer<sup>2</sup>, M. Kimball<sup>4</sup>; <sup>1</sup>Xavier University of Louisiana, <sup>2</sup>Tulane University, <sup>3</sup>University of Alabama, <sup>4</sup>Ochsner Health

**Learning Outcome:** Upon completion, participants will be able to identify factors that may influence restaurant customer food choices.

**Background:** As one-third of calories consumed in the U.S. are attributed to away-from-home foods, restaurants are promising environments to encourage healthy eating and address obesity. Restaurant-based healthy eating programs have potential to improve customer food choices. This study describes the extent to which Ochsner Eat Fit (EF), a restaurant-based healthy eating program in New Orleans, Louisiana, influenced customer food choices and the association between food choices and customer individual and environmental factors.

**Methods:** Customers were recruited for intercept interviews as they exited EF restaurants. Generalized estimating equations were used to predict food orders. Independent variables included customer beliefs, attitudes, perceptions of environment, social support, self-efficacy, and demographic characteristics.

**Results:** Of 608 customers from 34 restaurants, 105 (17.3%) reported they ordered an EF item. Customers who agreed that the restaurant environment supported healthy choices were 3.4 times more likely to order EF items than those who did not agree (95%CI: 1.5–7.7, p < 0.001). African-American customers were 2.1 times more likely to order EF items than White customers (95%CI: 1.1–3.7, p < 0.05). Customers trying to make dietary changes were 4 times more likely to order EF items than those who were not (95%CI: 1.2–13.1, p < 0.05).

**Conclusion:** Restaurant-based programs may be a promising strategy to encourage healthy eating behaviors, especially among customers interested in dietary change. Customers who believed the restaurant environment was supportive of healthy decision-making were more likely to order a healthier food item. Future programming efforts should focus on increasing promotion and number of healthy items to support healthy decision-making.

**Funding source:** Blue Cross Blue Shield Foundation of Louisiana

### The Use of a Virtual Flipped Classroom Model to Promote Students’ Critical Thinking Skills in a Nutrition Graduate Program

**Author(s):** J. Tomsisko, J. Bredenbaugh, D. Cohen; Rutgers University School of Health Professions

**Learning Outcome:** Upon completion, participants will be able to describe how learning activities in a virtual flipped classroom model may promote critical thinking skills in graduate nutrition students.

Flipped classroom models incorporate active learning techniques and have been found to increase critical thinking skills in students. This teaching model aligns with ACEND’s competency that students must incorporate critical thinking skills in practice. However, limited published research exists to guide educators on how to integrate virtual flipped classrooms (VFC) into online courses. The objective is to describe how programs can use VFCs with virtual face-to-face (F2F) class to promote critical thinking skills in nutrition and dietetics curricula. Students received an overview to the VFC model and course structure during program orientation; higher level thinking, communication, critical thinking skills and teamwork were emphasized. All (n = 11) didactic classes used Zoom web conferencing for virtual F2F classes and were structured with pre-, in- and post-class learning activities. Pre-class, students were instructed to watch pre-recorded lectures, videos, web-tutorials and complete applicable pre-quizzes. During virtual F2F classes, learning activities included problem solving, reflective practice, simulation, role-playing, case studies and presentations. Post-class, assessment of student learning and critical thinking skills occurred through formative and summative assessments such as post-quizzes, exams, and case study assignments that emphasized analysis, synthesis and evaluation of student performance. Graduating students (n = 24) provided feedback on the VFC model during program exit interviews. Overall, student statements were consistent and feedback was positive. Students felt the VFC model fostered their critical thinking skills and helped prepare them for supervised practice. The use of a VFC model may facilitate the development and application of critical thinking skills in graduate nutrition students.

**Funding source:** None

### The Essential Role of Registered Dietitians in Parenteral Nutrition

**Author(s):** L. O’Connor, M. Futerman; Northwell Health, Huntington Hospital

**Learning Outcome:** Upon completion, participants will be able to describe key characteristics for parental nutrition competencies, implement competencies to optimize care, and demonstrate knowledge of impact of RD involvement in nutrition support.

Interdisciplinary teams involving Registered Dietitians (RDs) reduce Parenteral Nutrition (PN) order writing errors and improve patient outcomes. The objective of our project was to reduce PN order writing errors by increasing RD collaboration at a community hospital in New York. Currently, New York State prohibits RDs to place PN orders.

**Methods:** A retrospective EMR chart review was conducted of all patients (n=304) with PN orders during the years of 2017, 2018, and 2021. Primary outcome measures included transcription errors, incomplete PN orders, and errors in amounts of additives. Intervention: RDs collaborated with the interdisciplinary team on PN, solely writing the PN orders (2017). Providers placed PN orders from 2018 to 2021 relying on RDs written regimens. PN pending order writing privileges were granted by the health system June 2021, and RDs fully began pending PN orders October 2021.

**Results:** Prior to the primary intervention of the RD collaboration, an error rate of 20% occurred (115 errors in 55 PN orders). During 2018, the error rate dropped to 81% (26 in 32). After the final intervention, the error rate further dropped to 31% (21 in 68), a decrease of 85% in errors. This collaboration affected the identification of patients that appropriately needed PN from 55 (2017) to 215 (2021), a 74% increase in PN use.

**Conclusion:** Allowing RDs to place PN pending orders as part of a multidisciplinary team significantly reduced PN order writing errors, the risk for adverse events, and impacted identification of patients requiring PN.

**Funding source:** None

### Training Compassionate Educators- A Symposium Focused on Marginalized Communities

**Author:** K. Hicks-Roof; University of North Florida

**Learning Outcome:** Upon completion, participant will be able to recognize the value of educators being informed about marginalized communities.

**Relevance:** The purpose of the program was to provide nutrition educators across the United States with training on understanding and helping marginalized communities.

**Priority:** Participants (n=53) attended this four-hour virtual symposium in September 2021 to cover highly discussed communities (transgender, disabilities, food insecure, and intuitive eating for health at every size). In hopes to educate the educator to be more knowledgeable when teaching these topics to students.

**Originality:** This symposium was free to all educators in the Nutrition Educators of Health Professionals DPG and free to all Academy student members. The virtual basis of the symposium allowed for increased accessibility for all participants.

**Synthesis:** The majority of attendees were Registered Dietitians (n=42) in Academia/Education (44%). There was representation across all regions (West 23%, Southwest 15%, Midwest 23%, Southeast 13%, Northeast 19%, and US Territories 5%). Overwhelmingly participants were extremely satisfied (92%) with the symposium and are extremely likely (90%) to attend a future diversity symposium. Participants recommended future iterations to cover other topics including sustainably, weight-neutral approaches, LGBTQ+ care, weight bias, culturally affirming pedagogy, and supporting marginalized nutrition professionals.

**Funding source:** Academy of Nutrition and Dietetics Diversity Mini-Grant
Acceptability of 100% Blueberry Juice, Fiber-Fortified, Antioxidant-Rich Rooibos Tea Containing Sorbet Developed to Help Prevent Type 2 Diabetes

Author(s): D. Piland1; L. Browning2; J. Sauceda3; J. McEnry4; R. Touger-Decker5, Y. Cui6; L. Byham-Gray7

Learning Outcome: Upon completion, participants will be able to describe the benefits of using antioxidants in beverages and snacks to support gut health.

Background: Antioxidants are beneficial in minimizing oxidative damage to cells, including the gut. Blueberries contain an antioxidant called aspalathin which can help prevent oxidative damage to the gut.

Objective: To evaluate the acceptability of a blueberry juice sorbet containing antioxidant rich rooibos tea in a population of health professions students.

Design: A randomized controlled trial was conducted where participants were randomly assigned to consume one of three sorbet samples, each containing 100% blueberry juice with different antioxidant-containing fibers. A visual analog scale and a 7-point Likert scale were used to assess sensory preferences.

Results: The highest rated sample was determined to be the sorbet containing 4 g of aspalathin per 4 oz. serving. Seventy-one percent of participants indicated they would purchase and consume the product.

Funding source: This study was supported by the National Institutes of Health (NIH).

Anxiety, Depression and Food Insecurity Among Health Professions Students During the COVID-19 Pandemic

Author(s): J. Sackey1, J. Sullivan1, R. Brody2, N. Gao3, R. Touger-Decker4, L. Byham-Gray5

Learning Outcome: Upon completion, participants will be able to describe the prevalence of food insecurity among health professions students and factors associated with food insecurity in this group during the COVID-19 pandemic.

Background: Food insecurity among college students exceeds the national average. COVID-19 impacted food security status and increased anxiety and depression across the U.S. This study explored how anxiety and depression were associated with COVID-19 related changes in food security status among health professions students.

Methods: A cross-sectional web-based survey emailed between January–March 2021 was utilized. COVID-19 related changes in food security status were assessed by one survey question. Anxiety and depression were measured using the 4-item Patient Health Questionnaire scale (PHQ-4). Binary logistic regression with COVID-19’s impact on food security status as the dependent variable was used to analyze the data.

Results: Of the 816 respondents, the median age was 25 years, 74.6% were female and 31.3% were first-generation college students. Thirty-one percent had screening scores reflecting depression, 17.2% reflected anxiety and 14.8% reported that their food insecurity increased during COVID-19. Screening positive for anxiety was associated with higher odds [OR=2.66] of being more food insecure due to COVID-19 after adjusting for covariates. Being a first-generation student [OR=1.87], receiving student loans [OR=1.81], losing income due to COVID-19 [OR=4.14], and being Black or African American [OR=3.33] were also independently associated with higher odds of being more food insecure due to COVID-19 after adjusting for other covariates.

Conclusions: Anxiety was independently associated with being more food insecure due to the COVID-19 pandemic among health professions students. Further research exploring screening and interventions for food insecurity and mental health among health professions students is needed.

Funding source: This work was supported by the Department of Clinical and Preventive Nutrition Sciences at Rutgers University which provided gift cards that were raffled off to participants who completed the survey.

Adults with Recent Binge Eating Episodes Have Higher BMI, Eating Disorder Symptom Scores, And Odds Of An Eating Disorder Than Non-Bingers

Author(s): K. Coakley1, K. Serier2, J. Smith3; 1College of Education and Human Sciences, University of New Mexico, 2National Center for PTSD, VA Boston Healthcare System, 3Department of Psychology, University of New Mexico

Learning Outcome: Upon completion, participant will be able to describe binge eating and binge-eating disorder frequency in a non-clinical sample of adults and compare eating disorder symptoms and features to non-binge eaters.

Background: Binge-eating disorder (BED) is the most common eating disorder (ED); however, ED symptoms are not well-examined in adults who binge eating but do not meet BED diagnostic criteria.

Methods: University students and staff 18 years and older were recruited in fall 2021 and completed a demographic survey, the SCOFF questionnaire and Binge Eating Disorder Screener-7 (BEDS-7), and the Eating Disorder Inventory-3 (EDI-3). Participants were grouped into three categories based on BEDS-7 responses: non-bingers, bingers (at least one binge eating episode in the past three months), and probable BED. One-way ANOVAs were utilized to examine differences in BMI, drive for thinness, bulimia, and body dissatisfaction EDI-3 scores. Logistic regression examined odds of an ED (SCOFF score≥2) between groups.

Results: 109 participated (74% female, 42% White, 82% students, mean age=27.7 years, mean BMI=24.9). Twenty-three (21%) screened positive for BED, 15 (14%) reported binge eating but did not meet BED criteria (BINGE), and 71 (65%) were non-bingers. BINGE and BED groups had significantly higher BMIs and drive for thinness, bulimia, and body dissatisfaction scores than non-bingers (p<0.05), but BMI and EDI-3 scores did not differ between BINGE and BED. Bingers had significantly higher odds of an ED (SCOFF score≥2) than non-bingers (OR=6.23, 95%CI=1.88-20.71).

Conclusion: Adults with recent binge eating, but who did not meet BED criteria, had higher BMI, ED symptom scores, and 6.23 times the odds of an ED based on SCOFF scores than non-bingers. Though binge frequency was not assessed, adults with recent binge eating warrant further clinical assessment.

Funding source: Supported by a University of New Mexico Research Allocations Committee Grant.

Associations between Diet, Stress, and Gastrointestinal Health in Endurance Runners

Author(s): E. Crain1, A. Licata, J. Hoffman; Winthrop University

Learning Outcome: Upon completion, participant will be able to list 3 factors impacting GI distress in runners and describe the relationship between psychological stress and GI symptoms found in the current study.

Background: Endurance exercise, especially running, causes gastrointestinal (GI) distress in some individuals, which is thought to be related to reduced gut blood flow and increased intestinal damage and permeability during exercise. Many factors may modulate the presence of GI distress during exercise, including diet, stress, and gut microbiome composition. Therefore, this observational study aimed to assess associations between dietary factors, stress, and gastrointestinal parameters in recreational endurance runners.

Methods: Data collection included fecal samples, 3-day food and exercise logs, and an online survey assessing running habits, GI health, and psychological stress. Microbial DNA from fecal samples was extracted and will be used in future research to assess gut microbiome composition.

Results: Twelve participants completed the study. Results showed that participants consumed a high fat (37.2% of calories) and low carbohydrate intake (43.5% of calories). Higher GI symptom scores were significantly associated with food consumption 1-4 hours prior to a run (r=6), compared to no food consumption (r=6; p=0.011). No significant associations were found between GI symptoms and psychological stress.

Conclusion: These results indicate that food intake prior to running may be a factor in the incidence of GI symptoms during running. In addition, this population consumed an abnormal diet in comparison to recommendations, suggesting a need for nutrition education and intervention. Future research should be conducted to further understand these potential factors impacting GI symptoms in endurance runners, and to identify methods to provide individualized nutrition interventions to minimize GI distress in this population.

Funding source: Winthrop University Internal Biomedical Research Fund.
### Availability and Access to Non-Cross Contaminated Gluten-Free Foods on Campus and in the Community for College Students Diagnosed with Celiac Disease

**Author(s):** P. Havens¹, C. Kreutzer¹, S. Dhillion; ¹University of Southern California, ²USC Leonard Davis School of Gerontology & USC Keck School of Medicine, ³USC Leonard Davis School of Gerontology

**Learning Outcome:** Upon completion, participants will be able to understand the experience of university students with celiac disease and identify the efficacy of a college campus and community in accommodating these students.

Celiac disease (CD) affects roughly 2 million Americans. For those attending college, obstacles associated with the demands of living gluten-free are likely to arise. The aim of this project is to uncover student experience both on a Southern California college campus and in the community, and to assess the limitations of non-cross contaminated gluten-free food choices. A Qualtrics survey was distributed to university students with a diagnosis of CD who live in university housing. Participants answered multiple choice and open-ended questions related to access and availability of gluten-free options in the dining halls, on-campus, and in the community. Open-ended questions were coded to identify emerging themes and overall survey results were evaluated using descriptive statistics. Of the 15 participants, 54% agreed that options in university dining halls and on-campus are limited, whereas options in the community are more abundant. However, 87% believe that trustworthy community restaurants remain limited. Additionally, 71% reported their on-campus meals were often salads or vegetables. The majority of students with CD believe they can eat safely at only 3–4 locations on-campus, but those options become uninteresting over time. Students with CD are preoccupied with where they will be able to eat and the quality of safety precautions observed by food service staff at on-campus facilities which limits their available dining options. Over half of the respondents suggested a need for better labeling and staff education on food preparation safety. Further research with a larger sample and at multiple universities is needed to elucidate these themes.

**Funding source:** None

### Body Fat Distribution (Android vs. Gynoid) and Dietary Intake Among Young Women Enrolled at Mississippi State University

**Author(s):** M. Ozrail¹, A. Alardawi², N. Reeder¹, T. Mosby¹; ¹Mississippi State University, ²King Abdul Aziz University

**Learning Outcome:** Upon completion, participants will be able to utilize findings to help them develop a diet plan that may aid in improving android body fat distribution and metabolic-related diseases.

**Background:** Obesity, and more specifically, android body fat distribution are linked to a higher risk of developing metabolic-related diseases.

**Objective:** The focus of this research is to investigate whether or not there is an association between body fat distribution, markers of body composition, and energy intake from macronutrients.

**Methods:** This was a cross-sectional study of female students (n=97). Waist and hip circumference were measured to calculate waist-to-hip ratio (WHR). Participants with a WHR > 0.85 were considered to have an android body fat distribution. Body composition was measured using a Bioelectrical Impedance Analysis scale to estimate body fat percentage and fat mass. The NIH Diet History Questionnaire was used to estimate usual dietary intake.

**Results:** Thirty-one percent of participants were classified as having an android body fat distribution. There was no significant association between body fat distribution and race (p = 0.05, chi-square). Women with an android body fat distribution had a higher mean BMI (p < 0.001) and greater total fat mass (p = 0.018). Women with android body fat distribution consumed higher percentage of energy from fat (p = 0.043) and higher percentage of energy from saturated fat (p = 0.007).

**Conclusion:** Our findings suggest an association between body fat distribution and percentage of energy intake from total fat and saturated fat.

**Funding source:** This material is based upon work that is supported by the Mississippi Agricultural and Forestry Experiment Station (MAFES) and by the National Institute of Food and Agriculture, U.S. Department of Agriculture, Hatch project under accession number 1011322, project number M8-609200.
Comparison of Calories, Fat and Sodium Contents of Soup Recipes in 108 English-written Bestselling Cookbooks from 10 Food Culture Groups

Author(s): S. Choi, E. Gambino, M. Hirsch, M. Servellon Herrera; Queens College, The City University of New York

Learning Outcome: Upon completion, participants will be able to identify differences in the amounts of calories, fat and sodium in the soup recipes from bestselling cookbooks from 10 food culture groups.

Background: Food culture-specific interventions using ethnic recipes can be a powerful tool to improve treatment outcomes for chronic disease. An overload of unproven online recipes, however, compels users to assess the recipes, as these recipes may not be credible. Compared to internet sources, bestselling ethnic cookbooks can be a reliable and reviewed resource for verifying traditional ethnic recipes. Therefore, the purpose of this study was to compare nutrient contents of the recipes for soup, an essential item across cultures.

Methods: A total of 108 English-written cookbooks from 10 food culture groups listed as bestsellers within each group on Amazon.com were used for this study. Analysis was performed on 10 groups and were regrouped into 4 regions (1.Africa/Caribbean; 2.North America/Europe; 3.Central/South America; 4.Jewish/Middle East/South and Southeast Asia/East Asia). The amounts of calories, fats (total, saturated, and trans-fat) and sodium in a total of 446 soup recipes were analyzed via cromoneter.com. Descriptive statistics, ANOVA and Tukey post-hoc test were conducted (P< 0.05).

Results: Significant differences were found in calories (P<0.03), saturated fat and sodium (P<0.001). The soup recipes from North America/Europe had significantly higher calories and saturated fat than those from Jewish/Middle East and Asia had (409.1 vs 322.8 kcal/serving; 7.4 vs. 4.3 g/serving), whereas the 4th region (943.1 mg/serving) had a significantly higher sodium than those from Africa/Caribbean (580.9) and Central/South America (578.8).

Conclusion: This study showed significant differences in calories, fats and sodium of the soup recipes across culture groups. These findings can help dietitians select healthy ethnic recipes for nutrition intervention.

Funding source: This research was supported by a Professional Staff Congress-The City University of New York (PSC-CUNY) Grant (#63322-0051).

Comparisons of Maternal Feeding Practices and Child Eating Behaviors by Child BMI Percentile Status

Author(s): T. Rielly, C. Delaney, C. Byrd-Bredbenner; Rutgers University, Rutgers, The State University of New Jersey

Learning Outcome: Describe the differences in mothers’ feeding practices and their young children’s eating behaviors by child BMI percentile category (i.e., underweight, healthy weight, overweight, obese).

Childhood obesity is prevalent, yet limited research has investigated the relationships among child weight status and maternal feeding practices and child eating behaviors. Thus, 369 mothers of children aged 3-6y were recruited to complete an online survey investigating these practices and behaviors using valid, reliable, 5-point agreement scales. Overall, mothers disagreed (mean=1.91±1.05SD) they were concerned about children’s weight or pressured children to eat healthy foods (mean=2.19±0.97SD). They were neutral about using food to reward children for eating healthy foods (mean=2.96±0.91SD) and controlling amounts children ate (mean=3.02±0.60SD). Mothers restricted amounts of salty snacks and sweets children ate (mean=3.86±0.85SD) and controlled children’s independent access to foods (mean=3.68±0.88SD).

Mothers were neutral about whether children exhibited food neophobia (mean=3.19±1.08SD), disagreed children were emotional eaters (mean=1.74±0.82SD), and moderately agree (mean=3.50±1.01SD) children self-regulated food intake. Height and weight of children reported by mothers were used to classify children by BMI percentile as underweight (n=27), healthy weight (n=190), overweight (n=43), or obese (n=109). ANOVA with Tukey post-hoc tests revealed maternal feeding practices as well as child food neophobia and emotional eating did not differ significantly (P>0.05) by child BMI percentile group. However, mothers reported their overweight children self-regulated food intake significantly (P<0.05) more than mothers with obese children (3.85±0.95SD vs. 3.36±1.13SD). Findings suggest maternal feeding practices and child eating behaviors tend to be unrelated to child BMI. Future nutrition interventions should increase awareness of links between feeding practices and child obesity risk while promoting child feeding practices that help children develop healthy relationships with food.

Funding source: United States Department of Agriculture, National Institute of Agriculture grant numbers 2011-68001-30170 and 2017-68001-26351.

Correlation between Firmicutes, Bacteroidetes and Firmicutes/Bacteroidetes Ratio and Lipid Profile in Severely Obese Women in Rio de Janeiro - Brazil


Learning Outcome: Upon completion, participants will be able to observe the correlation between the amount of Firmicutes, Bacteroidetes and the Firmicutes/Bacteroidetes ratio and plasma concentrations of lipid fractions in this obese population.

Background: Obesity is a chronic and multifactorial disease, and among the various factors involved in the etiology, gut microbiota seems to be relevant in the determination of body weight and changes in its diversity and in the proportion of intestinal bacteria can favor the development of chronic non-communicable diseases such as dyslipidemia, but these findings are still controversial.

Objective: To analyze the correlation between phyla Firmicutes, Bacteroidetes, and F/B ratio with lipid profile in severely obese women.

Methods: This is a cross-sectional study, performed with 19 severely obese women with a body mass index index greater than 40kg/m². Blood samples were collected after a 12-hour fast and lipemia (total cholesterol (TC), high-density lipoprotein cholesterol (HDL-c), and tri-glycerides (TG) have been evaluated through the enzymatic-colorimetric method, and low-density lipoprotein cholesterol (LDL-c) was also calculated. Gut microbiota was assessed through 16s ribosomal sequencing. The phyla were evaluated in percentage and absolute values. For statistical analysis, Spearman correlation tests have been performed by Statistical Package for Social Science, Version 22.0, considering significant p-value < 0.05.

Results: There was a moderate positive correlation between the Bacteroidetes (%) and TG (p-value = 0.013; r=0.558) and a moderate negative correlation between the amount of Firmicutes and F/B ratio with TG (p-value = 0.034; r=-0.488 and p-value = 0.012; r=−0.565, respectively). No correlations were observed between phyla or F/B ratio and other lipid fractions (TC, HDL-c, LDL-c).

Conclusion: Bacteroidetes phylum seems to be related to the increase in triglycerides, and may be associated with dyslipidemia.

Funding source: Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNpq (432339/2016-7) and Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro - FAPERJ (E-26/210.261/2019).

Despite Higher Oxalate Content, Whole Grains Should Be Encouraged in Patients with a History of Calcium Kidney Stones

Author(s): M. Betz1, K. Penninston1; 1University of Chicago Medicine, 2University of Wisconsin School of Medicine & Public Health

Learning Outcome: Understand the role of dietary phytate for the prevention of calcium kidney stones, and identify primary food sources of phytate.

Background & Objective: Urinary phytate is a novel target for prevention of calcium kidney stones. Phytate prevents kidney stones by forming a soluble complex with calcium in urine; higher intake is correlated with a lower risk of calcium-containing kidney stone recurrence. Our objective was to identify primary phytate food sources in people with a history of nephrolithiasis.

Methods: Patients (n=83) at a kidney stone prevention clinic completed 4-day food-records. A Registered Dietitian Nutritionist (RDN) analyzed the records using National Data System for Research (NDSR).

Analysis: Descriptive statistics were run for all nutrients. Foods contributing >100mg phytate per portion consumed were identified.

Results: Phytate intake was 764±341mg/day. Foods contributing >100mg of phytate per portion consumed comprised 7.9% of all foods and accounted for 71% of phytate consumed. Cereals contributed the most (31.3% total phytate) followed by whole grains (13.4%), chips/French fries (11.6%), nuts/nut butters (11.6%), and beans (7.5%). Dietary phytate correlated with oxalate (r=0.468, p<0.00).

Discussion & Conclusions: Whole grains and cereals contributed substantially to phytate intake in this group of patients with nephrolithiasis. Whole grains are frequently restricted due to oxalate content, despite limited research supporting low oxalate diets for nephrolithiasis prevention. Moreover, whole grains are a significant source of fiber, antioxidants, and magnesium, the latter of which is a specific inhibitor of calcium oxalate stones. RDNs should promote whole grains for calcium stone prevention to ensure ample intake of phytate and other nephrolithiasis inhibitors.

Funding source: None
Determinants of Resting Energy Expenditure in Well-Nourished Adults with Amyotrophic Lateral Sclerosis

Author(s): A. Ellis1, J. Rosenfeld2; 1The University of Alabama, 2Loma Linda University

Learning Outcome: Upon completion, participants will be able to describe certain factors associated with resting energy expenditure of individuals with Amyotrophic Lateral Sclerosis.

Objective: Variable resting energy expenditure (REE) among adults with Amyotrophic Lateral Sclerosis (ALS) led to speculation that increasing effort to breathe may influence REE. Prior studies examining this hypothesis may be confounded by inclusion of malnourished patients. This study aimed to examine relationships between REE and pulmonary function among well-nourished adults with ALS.

Design: Participants were 43 adults (mean age 54.2 ± 12.0 years) with a diagnosis of probable, lab-supported or definite ALS. REE was measured by indirect calorimetry according to standard protocol. Weight was measured by a calibrated scale, and fat-free mass (FFM) was estimated by bioelectrical impedance analysis using an equation validated for ALS. Dietary intake was quantified by 24-hour recall, and pulmonary function was assessed by forced vital capacity (FVC) and patient report of noninvasive positive-pressure ventilation (NIPPV) use.

Results: All patients had normal body mass index (BMI), and average protein intake exceeded the Recommended Dietary Allowance by 40%. REE was higher in men than women (p < 0.001). REE was inversely correlated with age (r = -0.308, p < 0.045) and positively correlated with BMI (r = 0.409, p < 0.006) and FFM (r = 0.814, p < 0.001). REE was not related to FVC, hours of NIPPV, or months since symptom onset. In a multivariate analysis, FFM (p < 0.001) and age (p < 0.003) were independently associated with REE (R² = 0.706).

Conclusions: Among this well-nourished cohort of patients with ALS, REE was not related to pulmonary function. Beyond the traditional correlates of age, sex, and body composition, research is needed to explore metabolic alterations in ALS.

Funding source: The Amyotrophic Lateral Sclerosis Association (ALSA) Clinical Management Grant.

Early Implementation of a Perioperative Nutrition Support Pathway for Patients Undergoing Esophagectomy for Esophageal Cancer

Author(s): C. Stella, E. Kenny, M. Garrity, L. Russo; Memorial Sloan Kettering Cancer Center

Learning Outcome: Upon completion, participant will be able to describe the role of the Registered Dietitian-Nutritionist in perioperative nutrition protocols.

Background: Esophageal cancer patients are at high nutrition risk due to mechanical obstruction and side effects from treatment. As a result, patients often develop weight loss and malnutrition. To improve the nutritional status of esophageal cancer patients undergoing esophagectomy surgery, a standardized perioperative nutrition care protocol, including enteral feeding, oral diet advancement and Registered Dietitian-Nutritionist (RDN) involvement at all points of care, was established by a multidisciplinary group of RDNs, Thoracic Surgeons, and Ambulatory Nurses.

Hypothesis: The primary purpose of this retrospective cohort study was to determine the impact of the standardized perioperative nutritional care protocol on patient outcomes.

Methods: Patients who had esophagectomy surgery as treatment for esophageal cancer between January 2015 and August 2019 were included. Pre-protocol patients, who had their diet and nutrition managed individually by their surgical attendings prior to the implementation of the protocol, were compared to post-protocol patients, who followed the standardized perioperative nutrition care protocol, for length of stay, days to diet initiation and weight status.

Results: Patients in the post-protocol group had the following statistically significant clinical outcome improvements: faster oral diet advancement; less days for removal of feeding tubes; shorter length of stay; and less weight loss at follow-up. A unique aspect of the post-protocol group is the continued intervention by the RDNs until feeding tube removal and advancement back to a regular diet.

Conclusion: This research suggests standardized perioperative nutrition protocols are feasible, able to improve patient outcomes, and positively influence the patient experience post esophagectomy surgery.

Funding source: None

Development and Validation of a Whole Food, Plant-Based Diet Screener to Enhance Patient-Provider Discussions on Lifestyle Behavior Change

Author(s): K. Cara1, T. Myers2, S. Friedman3, K. Pollard4, E. Campbell3, M. Karlsen4; 1Tufts University, 2TrueNorth Health Center, 3University of Rochester Medical Center, 4American College of Lifestyle Medicine

Learning Outcome: Upon completion, participants will be aware of a new dietary assessment screener tool designed for clinicians and researchers to quickly assess adherence to a whole food, plant-based dietary pattern.

Increased interest coupled with growing research in whole food, plant-based (WFPB) diets for treatment of chronic diseases makes assessment of adherence to this dietary pattern an emergent gap in clinical care. In order for food to become medicine in the continuum of health, RDNs and other lifestyle medicine clinicians need validated tools to assess adherence to WFPB dietary patterns. Such a tool does not exist. This research aims to develop and validate short and long versions of a WFPB dietary screener for use in clinical settings and to enable research on how WFPB diets impact clinical health outcomes.

Researchers and clinicians are designing the screeners to measure the WFPB dietary pattern defined by intake of minimally processed plant foods and avoidance of animal-based and highly processed foods. Screener items address food groups (e.g., fruit, grains, meat, dairy); calorie-dense plant foods (e.g., coconut); prepared/packaged foods; and added salt, sugar, and fats. The long version adds patient attitudes and barriers (e.g., desire and resources for cooking) and food purchase criteria (e.g., convenience). Screeners will be tested by clinicians prior to validation against food diaries from a diverse respondent sample with human subjects research approval from the University of New England Institutional Review Board.

Development of these screeners will fill a need among lifestyle medicine clinicians who are prescribing WFPB dietary patterns to improve health outcomes. The screeners will be freely available online. These tools will enhance patient-provider discussions on healthy lifestyle change and facilitate research on the use of food as medicine.

Funding source: This research is supported by the American College of Lifestyle Medicine (ACLM). ACLM is involved in the design and validation of the screeners.

Eating Behaviors are Associated with Energy Intake during a Sustained Military Training Exercise

Author(s): H. Fagnant1, T. Smith2, S. McGraw1, J. Smith3, E. Gaffney-Stomberg4, G. Giles5, S. Elkin-Frankston2, J. Karl1, V. Bode2; 1U.S. Army Research Institute of Environmental Medicine, 2DEVCOM SC

Learning Outcome: Upon completion, participant will be able to describe specific eating behaviors associated with higher energy intakes during a military training exercise.

Background: Negative energy balance during military operations is common and contributes to performance decrements. Characterizing the eating behaviors (EB) of Soldiers who self-select higher energy intakes during military operations may identify strategies for promoting energy balance and optimizing performance.

Methods: Dietary intake was measured using daily food logs and food trash collection in 67 male Soldiers (BMI 26.5 ± 3.4 kg/m², 23 ± 3.5 yr) participating in a 3-d military training exercise. Questionnaires were administered before, during, and after the exercise to assess nutrition knowledge, habitual diet quality, usual EB and EB during the exercise. Associations with mean energy intake (EI; kcal/kg) and daily EI (kcal/kg) during the exercise were determined by backwards elimination multiple regression and linear mixed models, respectively.

Results: Mean EI was associated with habitual dietary restraint (β(SE): -0.5 ± 0.3 kcal/kg, p < 0.04), often/always versus never planning what to eat during the exercise (β(SE): 5.2 ± 1.8 kcal/kg, p < 0.01), and BMI (β(SE): -0.6 ± 0.3, p < 0.02). Daily EI was associated with the daily number of meals/snacks consumed (β(SE): 2.0 ± 0.5 kcal/kg, p < 0.01), daily hunger levels (β(SE): -0.1 ± 0.0 kcal/kg, p < 0.01), running out of food each day (β(SE): 4.4 ± 1.0 kcal/kg, p < 0.01), and BMI (β(SE): -1.0 ± 0.2 kcal/kg, p < 0.01).

Conclusions: Higher self-selected EI during short-term military training and operations may be associated with conscious decisions about what to eat, more frequent intake of meals and snacks, and greater hunger. While lower EI may be associated with higher BMI and greater dietary restraint.

Disclaimer: Authors’ views do not reflect official DoD policy.

Funding source: U.S. Army Medical Research & Development Command; US Army Combat Capabilities Development Command
Endometrial Cancer Risk Reduction by Coffee Consumption: Meta-Analysis of Prospective Cohort Studies

Author(s): Y. Bai, M. Alsaaidi; Montclair State University

Learning Outcome: Describe the degree of risk reduction brought by coffee consumption

Introduction: Endometrial cancer raises a great concern as it is the most common type of gynecological tumor in developed countries and its prevalence is on the rise. Studies report varying degrees of risk reduction effect of coffee consumption. The purpose of this study is to provide summary relative risks by combining prospective cohort studies.

Methods: A systematic search for articles on coffee and endometrial cancer observational studies was conducted in PubMed limited to publications until Dec. 2021. Studies were combined to estimate pooled relative risks using random effects model. The meta-analysis compared the highest coffee intake level to the lowest intake level from each study with BMI and smoking subgroup analysis. Heterogeneity and publication biases were tested using I² and Egger's test.

Results: A total of 16 prospective cohort studies were identified. The summary relative risk (RR at 95% CI) for highest compared with lowest coffee intake was 0.74 (0.67-0.81). BMI (low vs. high BMI) and smoking (low vs. high smoking) subgroup analyses indicated inverse relationships between coffee and endometrial cancer: BMI, 0.96 (0.83-1.08) vs. 0.59 (0.48-0.70); smoking, 0.76 (0.64-0.87) vs. 0.78 (0.51-1.05), respectively. Small study effect was observed based on Egger's test (p=0.05) with moderate degree of heterogeneity across the studies at I²=35.8%.

Conclusion: The 26% risk reduction effect of coffee consumption on endometrial cancer risk is found. The reduction effect largely differed by BMI but similar by smoking status.

Funding source: None

Evaluation of a Weight Management Program for Kidney Pre-Transplant Patients

Author(s): S. Mar¹, S. Kim², J. Silva³, J. Wu¹; ¹University of Southern California, ²Keck Medical Center of USC

Learning Outcome: Upon completion, participant will be able to describe the importance of weight management for severely obese transplant candidates and describe a dietitian led multidisciplinary approach to improve transplant eligibility.

Background: Across centers, obesity is one of the main barriers to kidney transplant due to potential post-surgical complications and delayed graft function. Depending on the center’s BMI eligibility criteria, a high BMI is an absolute or relative contraindication for kidney transplantation. With increasing obesity rates, it is critical to investigate solutions for severely obese candidates. The research objective was to determine the effectiveness of a weight management program for high-risk kidney pre-transplant candidates at time of evaluation.

Methods: A retrospective review of 108 patients with BMI >33kg/m² presenting for kidney transplant evaluation was performed. Kidney transplant candidates with a BMI >35kg/m² are considered high-risk. All patients were counseled by a transplant dietitian and referred to three weight management interventions (WMI): (1) outpatient dietitian; (2) medically managed weight loss; and (3) bariatric surgery.

Results: Of 108 patients, 65% of patients did not seek WMI. Of the 35% who underwent WMI, majority of patients (79%) sought bariatric surgery consultation. At 24 months since initial evaluation, WMI patients had 20.8% estimated eight loss (EWL) compared to 8.7% EWL for patients who did not undergo WMI (P=0.25). 41.7% of WMI patients became eligible by decreasing their BMI to < 35kg/m² compared to 22.6% of patients that did not undergo WMI (P=0.05).

Conclusion: Results indicate that a multidisciplinary weight management program can improve transplant eligibility for high-risk candidates. Providing weight loss goals and interventions may be an effective way to decrease risks and increase transplant listings.

Funding source: None

Eating Habits of Female EliteWarfighters

Author(s): T. Oliver¹, K. Taylor², B. Spiering¹, W. Tharion², S. McGraw²; ¹U.S. Army Research Institute of Environmental Medicine; Oak Ridge Institute for Science and Education, ²U.S. Army Research Institute of Environmental Medicine

Learning Outcome: Upon completion, participants will be able to describe the eating habits of Female Elite Warfighters.

Background: Women fully integrated into U.S. military combat roles within the last five years. A small number of females have since graduated from elite combat training courses, involving strenuous physical and mental demands. Training success has been linked to physical performance which is affected by dietary quality and nutrition status. Female elite warfighters (FEW) represent a unique group; as such, better understanding of their dietary habits might help guide future FEW.

Purpose: To assess the dietary habits of FEW and compare them to age-matched women in the U.S. civilian population.

Methods: Thirteen female (30±6 y, height 167±7 cm, body mass 69.4±8.2 kg, BMI 25.0±2.3 kg·m−² [mean±SD]) graduates of elite combat training courses completed a validated food frequency questionnaire (FFQ; Block 2014, NutritionQuest, Berkeley, CA). The FFQ assessed intake over the previous 6-months based on a list of food and beverage items. Diet quality was assessed using the Healthy Eating Index-2015 (HEI). HEI scores of the FEW were compared to a sex- and age-matched cohort from the 2017-18 National Health and Nutrition Examination Survey (NHANES, n=1110).

Results: Total HEI scores for the FEW (67.3±10.5) exceeded the NHANES cohort (57.0±1.5). FEW dietary intake was greater than or equal to NHANES in seven out of nine adequacy components, whereas dairy and seafood intake were lower than NHANES. FEW reported reduced refined grains and added sugar intake than NHANES.

Conclusion: Female graduate of elite military training consume a diet high in nutritional quality.

Funding source: U.S. Army Medical Research and Materiel Command
Expanding the Reach of Nutrition Students and Professionals Through Virtual Mentoring via the RD Mentorship Program

Author(s): J. Nichols1, J. Countryman2, C. Bell3, E. Culpepper4, K. McCary5, K. Beathard6, K. Hicks-Rood7, 1University of North Florida, 2Texas A&M University

Learning Outcome: Upon completion, participants will be able to describe how virtual mentoring can increase outreach capability and professional representation.

Research outcome: The purpose of this research was to analyze the effects that the modern virtual world has on the size, outreach capability, and professional representation of the nutrition and dietetics profession via the RD Mentorship Program.

Methods: The RD Mentorship Program was a national, project-based mentoring program that virtually matched dietetics students (n = 335) with registered dietitians (n = 235) based on their professional interest. Matched partnerships met at least once per month (virtually or face-to-face) from September 2021 to April 2022.

Analysis: Descriptive statistics were completed to analyze the data.

Results: Participants represented 47 states across the United States. Slightly, students came from 99 different universities with nutrition programs. Dietitian mentors practiced an array of nutrition fields, the highest representation from private practice (30%), Clinical (20%), Community/Public Health (6%), Academia (5%) and Nutrition blogging (5%). Mentors and mentees represented various racial groups including Caucasian (n = 366), Hispanic/Latino (n = 97), Asian (n = 53), Black/African American (n = 37) and multiracial (n = 14).

Conclusions: These findings indicated that a virtual option for nutrition-related mentoring created opportunity for students and professionals to participate in the program, regardless of location limitations. Virtual options allow for a broader outreach and an increase in representation among diversity and scope of practice. Further research should continue to analyze mentoring programs and the effect that modern virtual communication has on their outreach capabilities for enhanced learning experiences.

Funding source: None

Exploring Advocacy and Public Policy Educational Strategies in Nutrition and Dietetics

Author(s): B. Lowenkron, K. Fakier, C. McElheny; Franciscan Missionaries of Our Lady University

Learning Outcome: Describe opportunities to increase overall engagement and interest in advocacy and public policy among current and prospective RDs.

Background: Although dietetic internships (DI) are required to educate interns on advocacy and policy, the way in which this competency is met is at the discretion of dietetic internship program directors and varies in method and depth. The purpose of this study was to determine dietetic educators’ strategies and perceptions related to intern education in advocacy and public policy as well as to identify opportunities to increase dietetic intern engagement and interest in advocacy and public policy.

Methods: Sixteen e-interviews were conducted with dietetic educators over Zoom or email. Each participant responded to four semi-structured interview questions related to their beliefs, experiences, and professional point of view surrounding advocacy and public policy in the field of dietetics. Interviews were transcribed using Otter.ai and analyzed using MAXQDA (Version 20.2.1). Once thematic analysis was complete, the results were categorized to convey the underlying themes that emerged.

Results: The study concluded that dietetic educators should implement a more robust advocacy and public policy component and collaborate with other dietetic educators to share ideas and instill standardized methods of executing this competency.

Conclusion: In order to increase collaboration, improve method of delivery, and manifest perceived value in advocacy and public policy education in DIs, collaboration among DI directors during the annual NDEP meeting would be beneficial. Because this study was conducted on a national level and participants were from every region of the country, the results and recommendations of this study are transferrable to DIs across the board.

Funding source: The authors received no financial support for the research, authorship, and/or publication of this article.

Exploring the Predictors of Willingness to Consume Plant-Based Meat Among College Students

Author(s): A. Gaylord, D. Avelino, C. Lin; University of Connecticut

Learning Outcome: Describe college students’ perception, interest, attitude and intention toward plant-based meat as a dietary choice.

Background: Consumption of plant-based meat (PBM) is growing, driven by current health and environmental concerns. This study aims to assess college students’ perception, interest, attitude and intention to consume PBM as a dietary choice.

Methods: Undergraduate students (N = 251) enrolled in a general education course at a large Northeast university completed an online survey in early December of 2021. Students reported their plant-based meat information perception/access/interest and willingness to consume PBM, aside from cost and environmental factors related to a PBM diet.

Results: Participants indicated a moderate to moderately-high level of PBM information availability, interest in PBM information and willingness to add a PBM diet. News about PBM products and trusted people were the least and the most utilized sources for judging PBM information, respectively. Except for PBM information availability, females outscored males in all other PBM measures. Multiple regression results (R2 = .52, p < .001) showed that significant predictors of willingness to add a PBM diet included the cost and environmental impact factors, interest in receiving PBM information, and product news about PBM, but not gender or information availability.

Conclusions: Participants were moderately interested in PBM or adding a PBM diet. Women were more interested in PBM than men. Aside from information factors, PBM’s cost (equivalency to animal meat) and positive impact on the environment were important factors for encouraging PBM consumption. Taken together, this study suggests that social marketing campaigns are needed to educate the environmentally- and health-conscious Gen-Z consumers about how consuming PBM will significantly benefit both of these causes.

Funding source: None

Exploring the Relationship of Weight-Related Behaviors and Mental Health Characteristics with Reason for Exercising among College Students

Author(s): M. Mayersky1, K. Eck2, C. Byrd-Bredbenner1, V. Quick1; 1Rutgers University, The State University of New Jersey, 2Marywood University

Learning Outcome: Upon completion, participants will be able to identify the relationship between college students reasons for exercise with weight-related behaviors and mental health characteristics.

Background: Prior research shows exercise is associated with weight-related behaviors; however, limited studies have comprehensively examined weight-related behaviors and perceived reasons for exercising among college students. Thus, the aim of this study was to explore the relationship of weight-related behaviors and mental health characteristics with reasons for exercising among college students. A cross-sectional, online survey among Rutgers university students (N = 1709) was conducted with reliable and valid instruments that assess disordered eating and mental health characteristics among college students. Findings indicate health concerns regarding certain exercise motives among college students. More research is warranted to better elucidate these findings which may be important for health promotion programs on university campuses.

Funding source: New Jersey Agricultural Experiment Station
Father Concern About Child Weight and Nutrition Knowledge Associations with Child BMI

**Author(s):** L. Haldeman1, T. Irrer2, C. Buehler1; 1UNC Greensboro, 2Oakridge Institute for Science and Education/FDA

**Learning Outcome:** Upon completion, participants will be able to describe how father food parenting practices and nutrition knowledge impact child weight outcomes.

**Background:** Parents of school-aged children play an important role in shaping child eating patterns and weight outcomes. The specific role of fathers in food-parenting practices and nutrition knowledge may impact these outcomes.

**Methods:** This study examined father food-parenting practices and nutrition knowledge as predictors of child BMI percentile. This cross-sectional study collected socio-demographic and validated measures via an online survey. Participants included North Carolina father-child dyads (N = 407) who ate at least one meal per week with their child aged 6 - 11 years.

Multiple regression analyses were used to examine the prediction of child BMI percentile by father coercive control feeding practices, father food-parenting practices (perceived responsibility for child feeding, modeling of fruit and vegetable intake, promotion of child autonomy using praise, concern about child weight), and father nutrition knowledge.

**Results:** Father concern about child weight was uniquely related to increases in child BMI percentile (p = .00001). Higher father nutrition knowledge was uniquely associated with a modest decrease in child BMI percentile (p = .00064). Father coercive control practices, perceived responsibility for child feeding, and modeling of fruit and vegetable intake, and promotion of child autonomy using praise were not uniquely related to child BMI percentile.

**Conclusion:** Findings illustrate the importance of identifying father food-parenting practices which may result in unhealthy child weight outcomes. Father concern about child weight is complex and warrants further exploration.

**Funding source:** UNC Greensboro internal faculty award.

Feeding Stressors and Available Resources for Parents of Children with Down Syndrome: A Qualitative Analysis

**Author(s):** C. Brantley, L. Knol, J. Douglas, M. Hernandez-Reif, J. Lawrence, S. Wind; The University of Alabama

**Learning Outcome:** Upon completion, participants will be able to describe the various feeding stressors and resources available for parents/caregivers of children with Down Syndrome.

**Background:** Challenging eating behaviors or feeding difficulties, commonly displayed in children with Down Syndrome (DS), may amplify perceived stress in parents/caregivers of children with DS. Caregivers may find feeding stressful if they lack resources on how to accommodate for children with DS. The purpose of this qualitative study is to identify feeding stressors and resources used by parents/caregivers of children with DS.

**Methods:** Fourteen percent (n=132) of participants had a first trimester HbA1c >5.4%. Median prepregnancy weight (75 kg, IQR:67, 85) and BMI (26 kg/m2, IQR:23, 29) of participants with a HbA1c >5.4% were significantly higher than median prepregnancy weight (68 kg, IQR:60, 78) and BMI (26 kg/m2, IQR:23, 29) of participants with a HbA1c ≤5.4%. GDM diagnosis was significantly higher in the HbA1c > 5.4% group (n=45, 34.1%) compared to the HbA1c ≤ 5.4% group (n=119, 19.9%; p < 0.01).

**Conclusions:** In high-risk, pregnant woman, first trimester HbA1c >5.4% is cross-sectionally, significantly associated with diagnosis of GDM, after controlling for age, race, and BMI. This finding warrants further study.

**Funding source:** N/A - faculty startup funds
How Demographic and Social Factors Correlate with the Perception of Gluten and Gluten Sensitivity (GS).

Author(s): G. White, C. Anstrom; Olivet Nazarene University

Learning Outcome: Upon completion, the participant will be able to determine which of the presented demographic and social factors correlate with GS or gluten misconceptions to discover potential contributors of GS.

Background: With an increase in GS cases, an exploration and understanding of how demographic and social factors such as gender, ethnicity, economic status, family/friend behavior, and social media correlate with GS and the perception of gluten was sought after.

Method: The researcher constructed a survey that was reviewed by 13 individuals for content, clarity, and internal consistency. The survey was sent out to the student body (2,658) at a small Midwestern university. The final number of participants was 176. Questions covering demographics, social backgrounds, GS, social media, and perception of gluten were included. Differences between groups (those with GS and those without) were analyzed using independent samples t-tests. The relationship and association between variables were analyzed using the two-way chi square test and phi coefficient, respectively.

Results: Participants were more likely to report GS if they grew up with backgrounds, GS, social media, and perception of gluten were included. Differences between groups (those with GS and those without) were analyzed using independent samples t-tests. The relationship and association between variables were analyzed using the two-way chi square test and phi coefficient, respectively.

Conclusion: Results suggest that social factors such as the incidence of GS within the family and the number of GS/gluten-free diet promoting celebrities and influencers followed on social media do correlate with GS. The findings support the need for additional research to explore the relationship between these social factors and GS.

Funding source: None

Implementation of Interprofessional Education in Dietetics Curricula

Author(s): M. Voorhees, H. Wengreen; Utah State University

Learning Outcome: To assess fulfillment of interprofessional education (IPE)-related ACEND requirements and examine associations between IPE approaches and directors’ confidence in students’ capacity to engage in interprofessional collaborative practice (IPCP).

Background: IPCP fosters optimal patient outcomes, thus integration of IPE approaches in dietetics education is essential.

Objective: To examine how dietetics programs are fulfilling ACEND IPE-related curriculum requirements and investigate whether number of IPE methods relates to directors’ confidence in students.

Methods: N=67 program directors (n=17 coordinated program (CP); n=22 didactic program (DPD); n=28 didactic internship (DI)) participated in this cross-sectional survey employing a mixed-methods approach. IPE was categorized as lectures, assignments, case studies or facilitated interaction with other disciplines, and direct experience. Multiple linear regression examined number of IPE methods reported and level of confidence in student IPCP (range: 0-10), accounting for time spent on IPE, program type (CP/DPD/DI) and level (undergraduate/graduate).

Results: Lectures (63%), assignments (60%), direct experience (73%), and case studies or facilitated multidisciplinary interactions (79%) were endorsed frequently. Number of IPE methods did not significantly predict confidence in student IPCP (p=.486) when accounting for time spent on IPE, program type, and level. DPD directors were less confident in students’ ability to engage in IPCP than CP directors (β=−1.46; p=.014).

Conclusions: Multiple IPE-related approaches appear to be regularly incorporated in programs; however, the number of methods may not be related to level of confidence in future IPCP. DPD directors were less confident in student IPCP upon program completion, potentially highlighting the perceived importance of IPE through direct experience.

Funding source: None

Maternal Dietary Supplements Intake and Edinburgh Postnatal Depression Scale Score During COVID-19 Pandemic

Author: U. Erliana; Indiana University Bloomington

Learning Outcome: Upon completion, participants will be able to describe the dietary supplements consumption by pregnant women and breastfeeding mothers and define the relationship between the supplements intake and the stress level.

Background: The demand of multivitamin and stress level during COVID-19 pandemic are increase. The aim of this study was to evaluate the relationship between dietary supplement intake and the Edinburgh Postnatal Depression Scale (EPDS) score of pregnant women and breastfeeding mothers during the COVID-19 pandemic.

Methods: The participants of this study were 47 pregnant women and breastfeeding mothers in Indiana. The Harvard Willett Food Frequency questionnaire was used to assess the consumption of supplements. An online survey by Qualtrics was used to obtain sociodemographic data and EPDS scores. Data were analyzed by descriptive statistics, cross-tabulations and a simple linear regression.

Results: Participants had a mean age of 30.13 ±3.59 years and 42.6% were not working. Twenty different types of dietary supplements (vitamin, mineral, oil, hormone, and multivitamin) were consumed by participants. The mean, minimum, and maximum scores of EPDS were 5.89, 0.00, and 13.00, respectively. Multivitamin was supplement that consumed by majority of participants (78.7%), followed by vitamin D (38.3%) & vitamin C (29.8%). Simple linear regression analyses showed that it was not significant variance of EPDS score and dietary supplements intake, F(1, 45) = 3.45, p = .070, R² = .27, R² adjusted = .071. The regression coefficient (β = -2.19, 95% CI [-4.56, .18]) indicated that consumption of dietary supplements, on average, decreased EPDS score of 2.19 point(3,4),(996,992)
Meditation: A Promising, Cost-Effective, Low-Invasive Weapon in the Fight Against Obesity

Author(s): N. Hamler, K. Roddy; University of the Pacific

Learning Outcome: Recognize the benefit of meditation as a low-invasive, low-cost weight loss tool. Acknowledge the limited availability of meditation and weight loss-focused RTC and the need for further evidence-based research.

Background: With 2/3 of American adults categorized as overweight/obese, weight loss (WL) is a societal concern. Currently, more invasive techniques (e.g., bariatric surgery) are often considered over low-invasive modalities such as meditation.

Methods: A comprehensive systematic literature review was conducted Dec 2021 through Jun 2022 using the following search engines: PubMed, Cochrane, CINAHL, PsycARTICLES. MeSH terms included “meditation” and “weight loss”. Inclusion criteria: adult age, BMI ≥ 25, meditation, study dates: 2017-present. Studies focusing on comorbidities, pediatric/geriatric/pregnant patients, concurrent WL medications use, documented bariatric surgery or eating disorders were excluded.

Results: Database search yielded 87 studies: CINAHL (34), PubMed (27), PsycARTICLES (37), Cochrane (11). 85 studies were excluded due to focusing on comorbidities (37), mindfulness rather than meditation (15), duplications (8), “other” (25). Only two studies assessing WL through meditation remained for analysis. A total of 101 people (N=101) participated in both studies. Study length varied from 16 weeks to 6 months. Both studies demonstrated a significant average intervention group WL of 2.4 kg greater than the control groups (P<0.0055). One study assessed waist circumference (secondary outcome), finding an additional 5 cm reduction in the intervention group (P<0.001). Both studies concluded meditation was an effective modality for WL. Findings are limited by scant, well-designed studies and small sample sizes.

Conclusion: As a non-invasive intervention, meditation has the potential to become a powerful weapon in the WL war. While promising, more research is needed. Authors plan to conduct an interventional study assessing mediation as an effective, low-invasive, low-cost WL tool.

Funding source: Application in process for Scholarly/Artistic Activities Grant (up to $3,200) and Hoefer Prize for Student-Faculty Research/Creative Projects ($5,000).

Neonatal Opioid Withdrawal Syndrome and the Impact on Early Growth in Infants

Author(s): M. Johnson, A. Chroust, K. Boynewicz, C. Bonner, J. Kromash; East Tennessee State University

Learning Outcome: Describe the effects of opioid exposure and subsequent withdrawal on the growth of neonates in the weeks after birth.

Background: Maternal opioid use disorder and neonatal opioid withdrawal syndrome (NOWS) incidence grew exponentially in recent years. Infants with NOWS often have poor suck/swallow coordination, altered state-regulation, excitability, and hypertonicity which may lead to dehydration and suboptimal weight gain. Neonatal weight loss in the first days, results from fluid loss and possible fat loss. Typically, infants’ weight regain begins at 2-3 days of life, with average rebound by Dol 10-14. The research aim of this study is to compare early weight gain and growth of infants with NOWS against established standards.

Methods: The current study retrospectively examined 294 infants born between 2011 and 2016 who were diagnosed with NOWS and received treatment in a local level-III NICU. All infants were >37 weeks gestation and received a physical therapy examination. Measures of oral motor function, daily weights, and feeding sources were extracted. Infants with weights through DOL 5+ (N=97) were included for analysis.

Results: ANCOVA with infant sex, and feeding method as covariates and time (DOL 5, 7, 14) indicated there is statistically significant weight gain across the first two weeks of life. F(2, 142) = 9.57, p < .001, partial eta 2 = .12. However, the mean weights for infants with NOWS were below the WHO 50th%ile at birth and below the 25th%ile at DOL 7 and 14. On average, weights at DOL 14 remained below birthweight.

Conclusion: Increased energy expenditure and poor intake negatively impact growth in this population. Further analysis will help determine appropriate interventions for optimal growth outcomes.

Funding source: None

Novel Type 2 Diabetes Prevention Intervention Increases Daily Steps and Moderates Weight Gain in Adolescents

Author(s): N. Clark1, J. Metos1, C. Ramos3; 1Southern Utah University, 2University of Utah, 3University of Michigan

Learning Outcome: Upon completion, participants will be able to evaluate effectiveness of a novel physical activity intervention on anthropometrics and physical activity outcomes.

New incidence adolescent type 2 diabetes (T2D) is increasing 4.8% annually. Previous interventions show limited efficacy helping teens modify exercise behaviors associated with elevated T2D risk. The purpose of this study was to examine the effectiveness of a novel T2D curriculum on anthropometric and physical activity outcomes. Curriculum was developed with input from secondary educators and was framed in Social-Cognitive Theory. It emphasized personal goal setting, technology, peer support, competition, and incentives. Three schools with students at risk for T2D (higher minority population, more students on free/reduced school lunch) were invited to participate as intervention sites, and geographically matched with three control schools. Adolescents in intervention schools received a six-lesson nutrition and physical activity-focused intervention curriculum in mandatory health classes. Students at three control schools received standard nutrition education in health classes. Data collection occurred at baseline (T1), 1-day post curriculum delivery (T2) and 1-month post curriculum delivery (T3). Primary outcome measure was BMI percentile, with secondary outcomes average daily steps and minutes moderate to vigorous physical activity (MVPA – measured by accelerometer). Multi-level general linear mixed effects regression models assess intervention effectiveness (Stata version 15). At T3, students in both groups increased BMI percentile; however, the intervention group slowed rate of BMI percent increase compared to control (p<0.011). The intervention group took more steps daily than control group at T2 (p<0.001) and T3 (p<0.001) with no differences in MVPA. Future interventions should focus on proven strategies to motivate adolescents to increase physical activity to reduce risk for T2D.

Funding source: Larry and Gail Miller Family Foundation - private funding to University of Utah
**Nutrition Status and Bone Density Outcomes 100 Days Post Allogeneic Bone Marrow Transplant**

**Author(s):** C. Hardin, M. Jackson, J. Ponce, N. Spurgeon, M. Mancuso Sheen, M. Timmerman, C. Hanson; University of Nebraska Medical Center, Nebraska Medicine

**Learning Outcome:** Upon completion, participant will be able to explain the relationship between nutrition status markers and bone density in patients 100 days post allogeneic bone marrow transplant.

**Background:** Bone marrow transplants (BMT) are associated with bone mineral density (BMD) loss. While vitamin D and calcium intake are well studied with preserving BMD, less is known about the impact of other nutrition markers and bone health. The purpose of this study was to determine the relationship between nutrition status markers and bone density after an allogeneic BMT.

**Methods:** A retrospective, cross-sectional chart review was completed for patients undergoing an allogeneic BMT at a midwestern hospital. Data were collected at Day 0 and Day +100 post-transplant. Non-parametric tests were used to evaluate the relationship between bone density T-scores and key nutrition markers, including weight change, malnutrition diagnosis, Malnutrition Screening Tool (MST) score, and nutrition support. A significance level was set at p < 0.05.

**Results:** The final analysis included 49 patients. Most patients were male (68.8%), and White (87.5%). Low bone density of the femoral neck was observed in 33.3% of patients. Patients lost a significant amount of weight (13.1%) from Day 0 to Day +100 (93.6 kg to 83.6 kg; p < 0.001). Malnutrition was diagnosed in 45.8% of patients and 55.9% of patients screened at nutrition risk with an MST between 2-6. Nutrition support was only used in 16.7% of the population. Weight change, malnutrition, MST, and nutrition support use was not associated with bone density +100 days post BMT.

**Conclusion:** This study highlights the proportion of patients with poor nutrition status post-BMT. Further research should identify ways to mitigate bone loss and preserve nutrition status in this population.

**Funding source:** None

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**Perceived Stress, Cortisol, Breath Hydrogen, and GI Symptoms After Consumption of Gluten and Inulin in Adults with and without IBS**

**Author(s):** W. Chey, B. Cash, B. Lacy, S. Cohen, L. Zeitzoff, P. Cekola, K. Araujo Torres, M. Epstein; Gastroenterology, Internal Medicine, University of Michigan, Memorial Hermann Hospital, Texas Medical Center, Mayo Clinic, Gastroenterology and Hepatology, Jacksonville, Florida, EpadStrategies A Division of TanStrategies, Inc, Nestle Health Science, Digestive Disorders Associates

**Learning Outcome:** Gain an understanding of the impact of a targeted release peppermint oil (PO-SST) supplement, on quality of life (QOL) measures in an adult population suffering from Irritable Bowel Syndrome (IBS).

Irritable Bowel Syndrome (IBS) symptoms interfere with daily activities and negatively impact quality of life (QOL). Medication management has proven efficacy, but cost and access may be a challenge. Peppermint oil (PO) has been shown to be effective in reducing symptoms. A novel form, designed to be delivered in the small intestine (PO-SST) has demonstrated symptom improvement and patient satisfaction. An online survey to evaluate the impact of a supplement with PO-SST (Ibgard®) on symptom improvement and QOL was conducted from January 15 - April 30, 2021. Data were summarized using descriptive statistics including counts and percentages for categorical measures and mean, standard deviation and ranges for continuous measures.

Survey completed by 1110 adults (71% female, 91% white). Participants categorized symptoms as diarrhea (33.0%), alternating diarrhea and constipation (30.1%), and constipation (21.6%); worst symptoms reported as abdominal pain (33.1%), diarrhea (18.7%) and bloating (15.9%). Unpredictability reported by 43.2% as the worst part of their symptoms. After taking PO-SST, the severity rating (10 most severe) for worst symptom decreased from a mean score of 7.9 to 4.5. After PO-SST use, a major or moderate improvement in QOL measures were reported in overall bowel function (96.7%), overall confidence level in managing IBS (94%), looking forward to enjoying a meal (87.3%), social activity engagement (86.7%) and work attendance (82.1%).

Survey results support the use of PO-SST as an additional option to manage gastrointestinal symptoms in adults suffering from IBS, especially for those concerned about the burden these symptoms impose on daily functioning.

**Funding source:** Nestle Health Science

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**Nutritional Status of Allogeneic Hematopoietic Stem Cell Transplant Recipients and Post-Transplant Outcomes**

**Author(s):** S. Couch, S. Szovati, C. Morrison; University of Cincinnati

**Learning Outcome:** Describe the relationship between nutritional status of allogeneic hematopoietic stem cell transplant recipients and outcomes post-transplant.

**Background:** Optimal nutrition is necessary for successful hematopoietic stem cell transplant (HSCT). Malnutrition is a frequent occurrence after HSCT due to the effects of the chemotherapy/radiation and complications post-transplant. This study investigated the relationship between nutritional status of HSCT recipients and outcomes post-transplant.

**Methods:** A secondary data analysis of The Factors Influencing Symptoms in Transplant Study was conducted to address the study aim. Data were analyzed from 18 patients 2-weeks pre-transplant and 3 weeks post-transplant. Nutrients/food servings analyzed from 24-recalls collected using ASA24 were scored for diet quality (DASH score, high vs. low), antioxidant status (Antioxidant score), and energy adequacy (>75% of recommended calories). Patient outcomes included frequency of GI symptoms (< 4 / > 4 very frequent), weight change (gain / loss), length of stay (LOS) (< 30 days / > 30 days), hospital readmission (yes/no), ICU admission (yes/no) and plasma albumin, IL-6, TNF α, and IL-10.

**Results:** Pre-transplant, patients consumed more calories, total and saturated fat (% kcals) and less carbohydrate (% kcals) vs. post-transplant. Higher pre-transplant diet quality was related to greater post-transplant GI symptoms (p < .01) and IL-10 (MD < 2.783; p < .01). Post-transplant, higher diet quality was related to greater albumin (p < .05), shorter LOS (p < .05), and no ICU admissions (p < .01); higher antioxidant status was related to greater albumin (p < .05); and energy adequacy was related to shorter LOS (p < .05) post-transplant.

**Conclusion:** Optimizing energy adequacy, antioxidant capacity and dietary quality pre and post -transport are important considerations to improve patient outcomes after HSCT.

**Funding source:** University of Cincinnati College of Nursing and Provost Third Century Grant

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**Peppermint Oil is Highly Effective for the Treatment of Food and Diabetics**

**Author(s):** A. Evenson, S. Stover, C. Zwick, K. Brewer, J. Milstroth, A. Windsperger, E. Rooney, L. Mettelmann, L. Andersson, C. Johnson, D. Meyer-Iverson; College of Saint Benedict/Saint John's University, College of Saint Benedict, Saint John's University

**Learning Outcome:** Upon completion, participants will be able to describe the relationships of stress on breath hydrogen and GI symptoms with consumption of gluten and inulin in those with and without IBS.

**Background:** Stress is thought to play a role in gastrointestinal symptoms.

**Objective:** To investigate the relationship between stress, breath hydrogen, and gastrointestinal symptoms after consumption of gluten and inulin in adults with and without IBS.

**Methods:** A double-blind, randomized, controlled crossover design included 24 non-IBS and 14 IBS participants. Fasted participants consumed a control low FODMAP smoothie (5g). Cortisol and breath hydrogen were measured at baseline, 1, 2, and 3 hours. GI symptoms differed between treatments or groups; no correlations were found between any variables (p > .05). For perceived stress, there were differences between treatments (MD = 2.783; p < .05). Cortisol did not differ between treatments or groups; no correlations were found between treatments (MD = 2.783; p < .05). GI symptoms differed between treatments (MD = 2.842; p = .015) in the non-IBS group; but no differences in the IBS group (p > .05).

**Results:** Cortisol did not differ between treatments or groups; no correlations were found between any variables (p > .05). For perceived stress, there were differences between treatment and control and inulin (MD = 2.842; p = .015) in the non-IBS group; but no differences in the IBS group (p > .05). There were no differences in breath hydrogen between treatments in either group.

**Conclusion:** Cortisol levels and perceived stress were not related to breath hydrogen or GI symptoms in non-IBS or IBS participants. Cortisol levels did not differ with consumption of gluten or inulin.

**Funding source:** CSBSJU Undergraduate Research Grant
Personalized Dietary Intervention for Women with Depression and Anxiety

Author(s): M. McLean1, G. Zarini1, S. Linke1; 1Oxford Biomedical Technologies, Inc. 2Food Sensitivity Specialists LLC

Learning Outcome: Provide scientific evidence to improve the nutritional and overall health of individuals with medical conditions.

Background: Research on the therapeutic role of personalized dietary interventions for women's mental and physical health is lacking. We assessed the effects of the Lifestyle Eating and Performance (LEAP) program to improve quality of life (QoL) and gastrointestinal symptoms among women with depression and anxiety.

Methods: The retrospective study included de-identified data on 25 women ([depression = 17] and [anxiety = 8]). Dietitians utilized the in-vitro Leukocyte Activation Assay-MRT (LAA-MRT®) results to develop the LEAP program based on the oligoantigenic diet principles. The LAA-MRT® measures white blood cells reactivity to scale the degree of an adverse immune response to 150 food antigens and chemicals. The Short Form-36 (SF-36) Health Survey was used to determine the QoL, a greater score reflecting a more desirable health state. A self-reported gastrointestinal symptom survey (GSS) was used to evaluate the severity and frequency of symptoms with a higher score indicating adverse health outcomes. Descriptive statistics and linear mixed models were conducted using SPSS V27. The study was approved by an independent Institutional Review Board (IRB).

Results: Mean age was 46.7 ±12.5 years, BMI 21.3 ±10.7 kg/m², and follow-up time 7.0 ±3.2 weeks. A significant increase in mean (SE) scores post-intervention was found for 4 domains [role limitation–physical health (31.9 ±9.6 vs. 51.4 ±9.1, P < 0.039), vitality (33.0 ±5.1 vs. 48.6 ±5.2, P = 0.015), emotional well-being (57.8 ±3.3 vs. 67.3 ±3.8, P = 0.040), general health (47.4 ± vs. 73.1 ±, P = 0.003)] and a decrease in GSS scores (12.8 ±1.3 vs. 6.5 ±1.1, P < 0.001).

Conclusions: Findings provide evidence supporting personalized dietary interventions to achieve a more desirable health status among women with depression and anxiety.

Funding source: Oxford Biomedical Technologies, Inc.

Policies Shifting Towards Universal School Meals

Author(s): R. Scherembeck, E. Piekarz-Porter, J. Chiriqui; University of Illinois at Chicago

Learning Outcome: Upon completion, participant will be able to identify laws aimed at Universal School Meals and reducing barriers to participation in school meal programs.

Background: The pandemic has forced schools and families to creatively provide nutrition for students to keep food insecurity at bay. Federal waivers through June 2022 allow schools to offer meals through the Seamless Summer Option (SSO). Six states have pending legislation. Six states have laws that require public school programs participation through federal pandemic-related waivers and by writing laws related to unpaid school meals charges, anti-stigma requirements, and NSLP application support to families. The purpose of the research is to identify state laws and pending legislation aimed at addressing the aforementioned barriers to participation in school meal programs.

Methods: Codified statutes, administrative regulations and pending legislation available as of February 1, 2022, on LexisNexis and Westlaw were collected using primary legal research methods by trained legal researchers.

Results: As of February 1, 2022, two states plan to implement USMs in school year 2022-2023. Six additional states have pending legislation. Six states' laws address access to school meal programs with additional reimbursement from the state. Twenty states have laws, in varying strength and requirements, addressing unpaid meal charges, anti-stigma and/or application support.

Funding source: This work was funded by a subaward from Westat (prime sponsor National Cancer Institute).

Post-Traumatic Growth Following Nutrition Integration During Lung Cancer Treatment: A Qualitative Study

Author(s): J. Smith1, J. Leotta1, C. Parvuki1, C. Spere2, P. Rothpletz-Puglia1, F. Zhang1, K. Pike1; 1Semel Institute for Health and Reproduction Sciences, Division of Medical Dietsetics, The Ohio State University, College of Medicine; 2The Ohio State University, College of Health and Rehabilitation Sciences, Division of Medical Dietetics, The Ohio State University, College of Medicine; 3The Comprehensive Cancer Center, 4Rutgers, The State University of New Jersey, School of Health Professions, 5Friedman School of Nutrition Science and Policy, Tufts University; 6The James Comprehensive Cancer Center; Division of Medical Oncology, The Ohio State University; 7The James Comprehensive Cancer Center; School of Health and Rehabilitation Sciences, Division of Health Sciences, The Ohio State University, College of Medicine

Learning Outcome: Understand the impact of nutrition intervention informed by motivational interviewing in the oncology patient population, specific to lung cancer and justify the need for Registered Dietitians in oncology care.

Background: Up to 80% of patients with cancer experience malnutrition and nutrition impact symptoms that adversely influence their treatment and prognosis. Yet the current standard of oncology care does not fully integrate nutrition into care despite 60% of clients requesting it.

Objective: To assess the impact and experiences of vulnerable patients with lung cancer participating in an intensive nutrition intervention (weekly medical nutrition therapy (MNT) informed by motivational interviewing (MI) plus home-delivered medically tailored meals (MTM)) during active treatment for lung cancer.

Methods: Telephone semi-structured interviews were conducted by two dietetic graduate students, trained by a national qualitative researcher, with 20 vulnerable patients undergoing treatment for lung cancer who were recruited from four cancer centers across the nation. Interviews occurred approximately 8 weeks into the intervention. All interviews were transcribed verbatim, and the transcripts were analyzed using thematic analysis within NVivo software. Interrater reliability was estimated at >80%.

Results: Three themes were identified: (1) Engagement and mediators driving behavior change (accessibility and convenience of MTM combined plus active participation in tailored nutrition counseling encouraged adoption of the evidence-based guidelines); (2) Behavior change (patients established goals that promoted improvements in dietary and lifestyle patterns); and (3) Resilience (patients developed strategies for coping; adjustment to their diagnosis, and prioritization of self-care).

Conclusions: Integration of MTM/MI plus the provision of MTMs throughout active lung cancer treatment resulted in improved patient engagement, health behaviors, and resilience thus contributing to post-traumatic growth.

Funding source: None

Practice What You Teach: Implications for Teachers Modeling Healthy Eating Behaviors

Author(s): C. Bolden, H. Huye, P. Paprzycki; The University of Southern Mississippi

Learning Outcome: Upon completion, the participant will be able to identify the implications of modeling healthy eating behaviors that may potentially impact children's eating behaviors and future weight status.

Fourteen percent of Mississippi preschool children are obese. Preschool children spend up to 50% of their day in childcare and with their teachers, consuming meals and snacks together. Modeling healthy eating behaviors may have an impact on children’s eating behaviors and future weight status. The purpose of this secondary data analysis was to examine the relationship between Head Start teachers’ dietary intake patterns and BMI.

Data from the Impact of a Preschool Obesity Prevention Intervention study were used to analyze the relationship between the variables. Variables included BMI and four items from the Starting the Conversation questionnaire related to consumption of snack foods, fast food meals, and desserts per week, and sugar-sweetened beverages per day. Data were collected at teachers’ respective Head Start centers in the spring of 2019. Pearson correlations were calculated to examine the relationship between teachers’ dietary intake patterns and BMI.

Sixty-six teachers completed the four items, and 73 teachers completed measurements for BMI. Significant relationships were found between consumption of snack foods and fast foods (r = 0.33, P < 0.01 and r = 0.27, P < 0.01 for BMI, 0.38, P < 0.01 and respectively). The relationships between eating desserts and drinking sugared sweetened beverages and BMI were weak and insignificant. Teachers’ mean BMI was 34.9 (+8.54).

Teachers play a pivotal role in teaching children about nutrition and healthy eating behaviors, but their eating behaviors and weight status do not appear to model that for which they teach. Interventions focusing on modeling of healthy behaviors for teachers may have an impact on children’s eating behaviors and future weight status.

Funding source: None
Prevalence of Dehydration Among American Collegiate Football Athletes with Sickle Cell Trait

**Author(s):** S. Hoffman, S. Kostelnik, M. Valliant; University of Mississippi

**Learning Outcome:** Demonstrate the lack of awareness that dehydrated athletes with sickle cell trait are at a greater risk of rhabdomyolysis or death when exposed to a normal athletic environment

**Background:** Since 2000, 63% of deaths associated with college football were due to complications, such as sickling events; however, sickle cell trait (SCT) only affects 3-4% of participating athletes. Sicking events can be exasperated by conditions, including heat exposure, dehydration, and intense physical activity and lead to rhabdomyolysis and death. Assessing hydration status is crucial for athletes and the use of urine specific gravity (USG) has been shown to provide rapid and valid results. The purpose of this study was to assess the prevalence of dehydration among SCT carrying American college football players.

**Methods:** Division I collegiate football athletes participated as part of a larger study. Athletes provided a midstream urine sample, for USG assessment, each morning for three days of fall football camp during August 2021. Cut offs for USG were as follows: well-hydrated (< 1.010), minimal dehydration (1.011-1.020), significant dehydration (1.021-1.030), severe hypohydration (> 1.030).

**Results:** Eight athletes exhibited SCT (20+ years old). On day 1 (USG 1.013±0.005), 37.5% were well hydrated, 62.5% were dehydrated. On day 2 (USG 1.011±0.004), 42.9% were well hydrated and 57.1% were dehydrated. On day 3 (USG 1.012±0.008), 28.6% were well hydrated, 71.5% were dehydrated. A majority (63.7%) of SCT athletes were dehydrated prior to practice, on average, based on USG.

**Conclusions:** These findings suggest the need for further education for sports medicine practitioners regarding the relationship between SCT and hydration status. To date, there has been one other study to explore the relationship between hydration status and SCT; therefore, more research is needed.

**Funding source:** None

Prevalence of Impostor Phenomenon in Registered Dietitians

**Author(s):** J. Hernandez1, N. Lopez2; 1Nutrition Collaborative, 2Northern Arizona University

**Learning Outcome:** Upon completion, participants will be able to define impostor phenomenon and identify its prevalence in a sample of Registered Dietitians.

**Background:** Impostor phenomenon, currently a hot topic in popular media, was initially identified among high achieving women who feel underserving of their successes because they perceive successes were earned through luck or chance, rather than skill or experience. There are no known studies of Registered Dietitians’ (RDs) perceptions of impostor phenomenon. This study assesses the following among RDs: (1) prevalence of impostor phenomenon and (2) differences in impostor phenomenon based on highest educational level achieved and years of experience as an RD.

**Methods:** A cross-sectional survey was sent electronically to 5,000 RDs credentialed by the Commission on Dietetic Registration in the United States. Respondents’ agreement with 20 impostor phenomenon statements from the Clance Impostor Phenomenon Scale were measured. The sum score from the scale was used to classify levels of impostor phenomenon. Descriptive statistics and chi square analyses for comparison were evaluated.

**Results:** Of the 445 people (9%) who began the survey, 266 (5%) completed it and were included in analyses. Over 76% reported at least moderate impostorism. No difference was seen based on educational level (p < .390); however, those with less than five years’ experience identified higher impostor phenomenon (p < .05). Among those with five to 39 years’ experience, over 40% reported moderate impostorism.

**Conclusion:** Impostor phenomenon is prevalent among Registered Dietitians. Moderate impostorism was pervasive among all those with less than 40 years’ experience and could potentially negatively impact professional practice and patient outcomes. Future research could explore ways to reduce moderate impostor phenomenon in RDs.

**Funding source:** List of credentialed provider email addresses was provided by the Commission on Dietetic Registration.

Preventive Energy Equations Are Correlated with Indirect Calorimetry in Critical Care: Is Correlation Good Enough?

**Author(s):** G. Murray1, S. Thomas1, T. Dunlea1, M. Nahikian-Nelm1, K. Roberts1; 1The Ohio State University, 2The Ohio State University Wexner Medical Center, Department of Nutrition Services, 3The Ohio State University Wexner Medical Center, Department of Respiratory Therapy

**Learning Outcome:** To determine the relationship between predictive equations and measured energy expenditure from indirect calorimetry in the intensive care unit.

**Background:** Dietitians are tasked with estimating energy requirements for critically ill patients. Inaccuracy in calculating energy expenditure may lead to underfeeding or overfeeding practices and adverse outcomes. Indirect calorimetry (IC) is the gold standard for determining energy expenditure. However, access is limited, so dietitians must rely on predictive equations.

**Methods:** A retrospective chart review of critically ill patients who underwent IC in 2019 was conducted. Mifflin St. Jeer (MSJ), Penn State University (PSU), and weight-based nomograms were calculated using admission weights. Demographic, anthropometric, and IC data was extracted from the electronic medical record. Data stratified by BMI classifications, and relationships between EER and IC were compared.

**Results:** Participants (N=342) were included. Median age was 59.2 (IQR: 23.9) years and BMI was 30.1 (IQR: 14.1) kg/m2. MSJ and PSU were positively correlated with IC at all BMI classes (all p < 0.001). Median measured energy expenditure was 1997 (IQR: 882) kcal/day, which is 1.1-fold greater than PSU, 1.2-fold greater than MSJ, and 1.3-fold greater than ASPEN guidelines (all p < 0.001).

**Conclusion:** Despite the significant relationships between measured and EER, the significant fold-differences suggest using predictive equations leads to significant under- and over-feeding which may result in poor outcomes. Dietitians should rely on IC when available, and increased training in the interpretation of IC is warranted. In IC’s absence, weight-based nomograms could serve as a surrogate as these calculations provided the closest estimate to IC in normal and overweight participants but not obese patients.

Registered Dietitians’ Knowledge about Human Trafficked Individuals

**Author(s):** L. Lacy1, J. Kandiah1, M. Zhang2, N. Kruzliakova1, J. Place2, J. Jones3; 1FFR Health, 2Ball State University

**Learning Outcome:** To assess registered dietitians’ (RDs) knowledge about human trafficked individuals (HTI).

**Background:** Human trafficking (HT) is the exploitation of an individual. There are many nutrition-related consequences HT (e.g., malnutrition, dehydration, and depression) face as a result of being trafficked. However, no research has explored knowledge of RDs on HT.

**Methods:** A cross-sectional study was conducted in Indiana involving 241 RDs who were asked to complete an online survey with multiple choice and open-ended questions. The survey measured demographics (e.g., age and gender), general knowledge of HT (e.g., forms of and causes for HT), and nutrition-related consequences in HTI. SPSS v. 26 was used for data analysis. Crosstabs and Chi Square models measured associations between age and knowledge of HT. Significance level was set at p < 0.05.

**Results:** The majority of RDs were Caucasians females (94%) and < 44 years (56%). More than half of the RDs (64%) identified sex trafficking as the most common form of trafficking with mental health and poverty being the primary causes. RDs correctly identified malnutrition (94%), depression (86%), and dehydration (83%) as being highly prevalent among HTI. RDs with the most general HT and nutrition knowledge were those 30-44 years. Age group comparisons found differences in knowledge (Welch F(2, 119.3) = 4.54, p = .005), indicating that younger RDs had more overall knowledge about HT.

**Conclusion:** Since HTI have many nutrition-related health consequences, it is crucial for RDs to be educated and receive training on HT. Education may ultimately lead to better health outcomes for HTI by improving their overall health status.

**Funding source:** None
**Student Training for Working with Patients with Traumatic Brain Injury: An Interdisciplinary Service-Learning Project**

**Author(s):** J. Douglas, J. Lawrence, P. Thairong; The University of Alabama

**Learning Outcome:** Describe improvements in students’ ability to work with patients with TBI after participating in an interdisciplinary service-learning course.

**Background:** Traumatic brain injury (TBI) is a leading cause of disability in the United States. Healthcare students should be prepared to encounter patients with TBI across care settings. The objective of this project was to examine the impact of an interdisciplinary service-learning course on student-reported preparedness and comfort in working with patients with TBI.

**Methods:** The University of Alabama offered an interdisciplinary service-learning course for graduate students in dietetics and speech therapy to provide healthcare services to patients with TBI during a 3-day summer camp. Post-course surveys were collected via Qualtrics and included 5 questions to assess changes in understanding of and ability to relate to patients with TBI. Responses were analyzed using descriptive statistics.

**Results:** Thirteen students completed the post-course survey. The majority of students (61%) reported a significant increase in understanding of the unique challenges faced by patients with TBI, and 46% reported a significant increase in their effectiveness in communicating with individuals with TBI. Furthermore, 92% of students reported a moderate or significant improvement in their ability to connect with individuals with TBI, and 85% of students reported an increased interest in working with this patient population because of their participation.

**Conclusions:** Graduate students participating in a 3-day service-learning experience reported substantial improvement in their abilities to communicate with, relate to, and understand individuals with TBI. It also increased their interest in working with this patient population. This suggests that even brief interdisciplinary experiences with patients with TBI can improve student confidence in working with this population.

**Funding source:** This project was funded by the Council on Community-Based Partnerships at The University of Alabama.

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**Telenutrition, Malnutrition and the Impact to Readmissions**

**Author:** L. Finch; Atrium Health

**Learning Outcome:** Understand the need for novel approaches to address malnutrition in the healthcare setting and how to provide flexible, low-cost interventions to at-risk patients.

**Background:** A diagnosis of malnutrition can significantly increase a patient’s risk for readmission to the hospital.

**Methods:** Clinical Nutrition and Case Management departments partnered on a small pilot program to refer patients who are discharged from the hospital with a diagnosis of malnutrition to a team of registered dietitians for a telephone consult (and follow up if warranted). These malnourished patients are a subset of a larger group identified as high risk for readmission.

**Results:** After analyzing the data from 2020, the rates of readmission were 16.7% for the patient group who received counseling from an RD (n=141) compared to 24% for malnourished patients in the TCM group who did not speak with an RD (n=1,010). This represents a 30.4% overall decrease in readmission. Reasons for not being contacted by an RD included: declining nutrition referral during CCM phone call, not answering initial CCM phone call, nutrition referral received but unable to return call d/t staffing.

**Conclusion:** Telenutrition offers a low cost, flexible and impactful intervention to malnourished patients at risk for readmission who may not otherwise have access to an RD.

**Funding source:** RDNs participating in this program are employed by Atrium Health.

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**Student Confidence in Working with Patients with Traumatic Brain Injury**

**Author(s):** J. Douglas, J. Lawrence, P. Thairong; The University of Alabama

**Learning Outcome:** Describe gaps in student confidence in working with patients with traumatic brain injury.

**Background:** Traumatic brain injury (TBI) is a leading cause of disability in the United States. Therefore, clinicians across care settings will likely encounter patients with TBI. The objective of this descriptive study was to assess student confidence in working with this population.

**Methods:** Fourteen graduate students (five dietetics and nine speech therapy students) enrolled in an interdisciplinary service-learning course to provide healthcare services to patients with TBI. Students were mostly Caucasian females (86% and 93%, respectively), and 64% reported some prior experience with patients with TBI. Prior to starting the course, students completed a Qualtrics survey which included five questions to evaluate student comfort, confidence, and preparedness in working with this population. Reasons for participation in the course were either interest in this population or it was a required clinical experience. Responses were analyzed using descriptive statistics.

**Results:** Approximately half of the participants reported feeling neither confident (50%) nor confident (57%) with individuals with TBI. However, only 29% of students reported confidence in evaluating and treating this patient population. Furthermore, only 21% reported feeling prepared for a clinical rotation in a medical setting with individuals with TBI.

**Conclusions:** Despite the majority of graduate students reporting having prior experience and being comfortable interacting with this population, few students felt confident or adequately prepared to treat individuals with TBI. This highlights an area for capacity-building among healthcare students and points to opportunities for interprofessional training among graduate students in dietetics and speech therapy.

**Funding source:** This project was funded by a grant from the Council on Community-Based Partnerships at The University of Alabama.

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**Relationship between Pre-Practice Urine Specific Gravity Hydration Levels and the Type of Sustained Practice Outcomes in Collegiate Football Athletes**

**Author(s):** S. Kostelnik, S. Hoffman, H. Nelson, J. Hogg, T. Andre, M. Valliant; The University of Mississippi

**Learning Outcome:** To assign emphasis to improving their pre-practice hydration status, in order to reduce the risk of sustaining a negative consequence of dehydration.

**Background:** Approximately 70% of college athletes start practice or competition dehydrated. It is known that negative consequences of dehydration include muscle cramps, vomiting, impaired cognitive functioning, increased cardiovascular strain, heat stroke, and impaired athletic performance. However, the level of hydration does not currently indicate which negative consequence is more likely to be sustained during practice. There are several methods to assess hydration status; however, the use of urine specific gravity (USG) is the most practical and valid method within collegiate athletic populations. The purpose of this study was to determine if there is an association between hydration levels, based on USG, and specific practice outcomes.

**Methods:** Division 1 collegiate football athletes provided midstream urine samples the morning of the second day of fall camp in August 2021. Hydration status was assessed using USG two hours before the start of practice. Practice outcomes (i.e., muscle cramps, vomiting, use of IV rehydration, dizziness/fainting) were recorded by student athletes.

**Results:** Thirty-four collegiate football athletes (20+/-2 years old) provided a pre-practice urine sample (1.018+/-0.007) and sustained a negative practice outcome. There was a significant association between hydration status and whether a practice outcome was sustained ($X^2 = 14.58, p=0.006; \Phi = 0.384, p=0.006$). However, there was no significant association between hydration status and which practice outcome was sustained ($X^2 = 6.135, p=0.726; \Phi = 0.425, p=0.726$).

**Conclusion:** These findings suggest that sport practitioners should educate athletes on pre-practice hydration due to the risk of sustaining a negative consequence.

**Funding source:** None

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**Poster Session: Clinical Care; Communications; Critical Thinking and Decision Making; Ethics and Professionalism; Food, Nutrition and Dietetics and Physical Activity; Leadership and Advocacy**
The Ability of the Malnutrition Screening Tool and the Braden Nutrition Score to Identify Risk of Pressure Injury Development in Hospitalized Patients

Author(s): C. DeLaney1, J. Ponce1, M. Jackson1, M. Brummels1, M. Timmerman1, C. Hanson1; 1University of Nebraska Medical Center, 2Nebraska Medicine

Learning Outcome: Upon completion, participant will be able to determine if the MST score or Braden Nutrition score can identify risk of pressure injury development.

Background: Pressure injuries (PIs) are associated with increased morbidity, hospital stays, and costs. Early identification and intervention is important to reduce the risk of hospital-acquired PIs. The purpose of this study was to determine if the Malnutrition Screening Tool (MST) score or Braden Nutrition score is associated with risk of PI development.

Methods: This was a retrospective medical records review of hospitalized patients who did and did not develop PIs. ANOVA and logistic regression, adjusted for age, sex, and diabetes history were used to evaluate the relationship of screening tools (MST [0-6] or Braden [4-0]) and PI development.

Results: The final study population included 168 patients who developed PIs and 290 who did not develop PIs. The MST score (p = 0.002) and Braden Nutrition score (p = 0.001) showed a significant difference between PI development and score levels. Adjusted odds of developing a PI were 3.4 times higher in individuals scoring an MST score of 5 (OR: 3.4, 95% CI [1.1, 10.0]; p = 0.029) compared to those scoring a 0 (no risk). Adjusted odds of developing a PI were significantly higher in individuals scoring a Braden Nutrition score of 1 (OR: 20.3, 95% CI [2.8, 148.1]; p = 0.003), or 2 (OR: 8.9, 95% CI [2.8, 28.3]; p < 0.001), compared to those scoring a 4 (no risk).

Conclusion: Those with high nutrition risk via the MST and Braden Nutrition score have an increased risk of PI. Dietitians can utilize these tools in nutrition assessment and interventions to help prevent PI development.

Funding source: None

The Association of SMOF Lipid Dose on Hyperglycemia in Adult Hospitalized Patients Receiving Parenteral Nutrition

Author(s): R. James1, H. Catron2, M. Jackson1, J. Ponce1, M. Timmerman1, C. Hanson1; 1University of Nebraska Medical Center, 2Nebraska Medicine

Learning Outcome: Upon completion, participants will be able to describe the relationship between SMOFlipid and hyperglycemia in adult patients who are TPN-dependent.

Background: Patients receiving parenteral nutrition (PN) are susceptible to hyperglycemia. Lipid emulsions are added to PN for calories and essential fatty acids, but little is known about their effect on blood glucose (BG). The purpose of this study was to determine if the dose of SMOFlipid (soybean oil, medium chain triglycerides, olive oil, fish oil) is associated with hyperglycemia in adult PN-dependent patients.

Methods: This was a retrospective chart review of 105 PN-dependent adult subjects receiving SMOFlipid with the primary outcome of hyperglycemia (BG > 180 mg/dL). Data was collected on PN script, BG, and anthropometrics. Relationships were examined with Chi-square tests, t-tests, and correlations. A significance level was set at p< 0.05.

Results: Most of the population was White (89.5%), with an average age of 57 years and BMI of 27 kg/m2. Participants receiving SMOFlipid doses below the mean of 0.66 g/kg/d had a higher proportion of patients experiencing hyperglycemia (Hyperglycemia Yes: 66% vs No: 45%; p = 0.029). Mean SMOFlipid dose was significantly different between subjects who experienced hyperglycemia and those who did not (Hyperglycemia Yes: 0.61 g/kg/d vs No: 0.72 g/kg/d; p = 0.019). SMOFlipid dose was negatively correlated with BG on the day of reaching dextrose goal (r = -0.293; p = 0.002). There was no significant difference in mean glucose infusion rate and hyperglycemia.

Conclusion: Lower doses of SMOFlipid may be associated with hyperglycemia. While many factors affect hyperglycemia, this observed relationship should be further examined for the prevention of hyperglycemia in patients receiving PN.

Funding source: None

The Association of Omega 3 Consumption from Seafood and C-Reactive Protein Levels (CRP), NHANES 2015-2018

Author(s): M. Jauhary-Nayfeh, S. Nielsen; Russell Sage College

Learning Outcome: Upon completion, participants will be able to describe at least one reason for the importance of consuming seafood regularly and for establishing a DRI for omega 3 fatty acids.

Background: Although the consumption of omega 3 fatty acids from seafood has been linked to many health benefits, research on its relation to inflammatory biomarkers especially CRP (C-reactive protein) levels has been limited. The objective is to examine the association between omega 3 fatty acid consumption from seafood and CRP levels while controlling for nutrition consumption.

Methods: Using the National Health and Examination Survey (NHANES) 2015-2018 data, omega 3 fatty acid intake from seafood, nut consumption, and CRP levels were examined. Omega 3 fatty acid consumption estimates were derived from the third-day seafood consumption data and categorized into: no consumption, less than 250 mg/day, and ≥250 mg/day. Nut intake was obtained from two 24-hour recalls. CRP levels were categorized as: less than 0.100 mg/dL, 0.100-0.299 mg/dL, and 0.300 mg/dL or over: SAS 9.4 was used for analysis.

Results: A significant protective association between individuals with the highest omega 3 fatty acid intake from seafood and CRP levels after adjusting for age, education, and gender existed (OR: 0.69; 95% CI: 0.56,0.85). Additionally, nut consumers were 35% less likely to have higher CRP levels when compared to non nut consumers even after adjusting for seafood consumption (OR: 0.65; 95% CI: 0.60,0.72). In the adjusted model, men had statistically significant lower CRP levels than women (OR: 0.63; 95% CI: 0.58,0.68).

Conclusion: Omega 3 fatty acid consumption from seafood as well as nut consumption were associated with lower CRP levels even after controlling for age, education level and gender.

Funding source: None

The Associations Between Maternal Dietary Choline Intake and Infant Growth Outcomes

Author(s): E. Williams, M. Thoene, M. Jackson, J. Ponce, M. Timmerman, C. Hanson; University of Nebraska Medical Center

Learning Outcome: Upon completion, participant will be able to explain characteristics of mothers who may be at risk of consuming inadequate choline intake and relationship with infant outcomes.

Background: Choline is a micronutrient essential to infant development. Preterm infants are at increased risk of poor developmental outcomes which is magnified by poor maternal nutrient intake. There is a gap in knowledge regarding maternal dietary intake of women who have given birth to preterm, Neonatal Intensive Care Unit (NICU)-admitted infants. The purpose of this study was to describe dietary choline intake for pregnant Midwestern women and identify associations between maternal dietary choline intake and infant outcomes.

Methods: This was a retrospective analysis of mother-infant dyads from an ongoing NICU study at a Midwestern hospital and TIPS (Tracking Infants Progress Statewide) database. Mann-Whitney U tests, one-sample Wilcoxon rank signs tests, and correlation coefficients were used to examine associations between choline intake and infant growth outcomes. A significance level was set at p< 0.05.

Results: The final analysis included 28 mother-infant dyads. Half of the mothers (50%) were White, with a median age of 29 years. Median choline intake of mothers was 317 mg, or 70.4% of the Adequate Intake (AI) of 450 mg. Non-white (p< 0.001), non-smoking (p < 0.001), and mothers with a singleton birth (p=0.03) had significantly less choline intake compared to the AI. No significant associations were observed between choline intake and infant growth outcomes.

Conclusion: Most mothers are consuming significantly less choline than the recommended AI, and certain demographics were identified for being at risk of poor choline intake. These findings can help target nutrition interventions and should be further examined in larger studies.

Funding source: None
The Comparison of Intuitive Eating Behaviors Between Student Athletes and College Students

Author(s): M. Pierce1, S. Kostelnik2, N. Wijayatunga3, M. Valliant1; 1University of Mississippi, 2University of Georgia, 3University of Mississippi

Learning Outcome: determine how college students and student athletes currently engage in intuitive eating habits and ways intuitive eating could be improved and promoted

Background: Intuitive eating strives to consciously listen to the internal hunger and fullness cues our body provides, as humans often practiced long before counting calories and dieting existed. Rational thought, instinct and emotion influence an intuitive eater’s decision making, as well as, allow for full capability in navigating food decisions. While intuitive eating habits can benefit any individual, little research has compared the intuitive eating habits between collegiate students and student-athletes. Due to the multitude of benefits intuitive eating provides, it is important to assess the differences between the two populations and further research why or why not a difference occurred. Therefore, the present study compared the intuitive eating habits of students and student athletes to determine if a significant difference exists between the two groups.

Methods: A total of 343 respondents (258 students and 85 student-athletes) completed a questionnaire using the Intuitive Eating Scale-2, which measures unconditional permission to eat, eating for physical rather than emotional reasons, reliance on hunger and fullness cues, and body-food choice congruence.

Results: Student athletes presented with a significantly higher overall intuitive eating score (3.53±0.54, p=0.003) and their counterparts. This group also presented with significantly higher eating for physical reasons, rather than emotional (3.49±0.92, p=0.001) and body-food choice congruence scores (3.64±0.85, p<0.001), compared to students.

Conclusion: To further investigate intuitive eating behaviors between these groups, more research is needed to solidify the claim that student-athletes have significantly higher intuitive eating behaviors than students.

Funding source: None

The Effects of Gluten and Inulin on Breath Hydrogen, GI Symptoms, Satiety and Sensory Aspects in Adults with and without IBS

Author(s): A. Evenson1, S. Stovern2, C. Zwack2, K. Brewer2, A. Windsperger3, J. Milstroh2; 1University of Saint Benedict/Saint John’s University, 2College of Saint Benedict, 3Saint John’s University

Learning Outcome: Upon completion, participants will be able to describe the impact of gluten and inulin on GI symptoms and breath hydrogen levels in those with and without IBS.

Background: Diets low in FODMAPs and gluten are often used to manage GI distress, which can be restrictive.

Objective: To investigate the effects of gluten and inulin on breath hydrogen, GI symptoms, satiety, and sensory attributes in individuals with and without IBS.

Methods: A double-blind, randomized, controlled crossover design was conducted with 24 non-IBS and 12 IBS participants. Fasted participants consumed a control low FODMAP smoothie and treatment smoothies that included the low FODMAP base and gluten (5g) or inulin (5g). Breath hydrogen was measured at baseline, 1, 2, and 3 hours. GI symptoms and VAS were measured at baseline, 10 min, 30 min, 1, 1.5, 2, 3, 12, and 24 hours. Sensory analysis was completed during smoothie consumption. Variables were analyzed by area VAS were measured at baseline, 10 min, 30 min, 1, 1.5, 2, 3, 12, and 24 hours. Sensory analysis was completed during smoothie consumption. Variables were analyzed by area

Results: There were no differences in breath hydrogen between treatments in either group. In the non-IBS group, gluten produced less GI symptoms than the control (MD=−2.842, p=0.05); however, no differences in GI symptoms were found in the IBS group (p >0.05). Differences for hunger (MD=−3.829, p=0.49) and fullness (MD=−3.88, p=0.044) were found between the control and inulin treatment in the non-IBS group. There were no sensory differences in either group (p >0.05).

Conclusion: Breath hydrogen responses from gluten and inulin consumption did not differ from the control and produced minimal GI symptoms in both non-IBS and IBS groups. Findings may support less restriction of gluten and inulin when managing GI symptoms.

Funding source: CSBSJU Undergraduate Research Grant

The Healthy Eating Index and its’ Association Between Mental Health and Eating Behaviors in College Students

Author(s): S. Jeune, C. Coccia; Florida International University

Learning Outcome: Identify the associations between mental health, eating behaviors and diet quality in college students.

Background: College students often experience stress which can lead to adverse mental health and eating behaviors. In result, diet quality may become reduced. Assessing diet quality with mental health and eating behaviors is important to gain more information regarding stress among college students.

Objective: To examine mental health, eating behaviors and diet quality in college students.

Study Design and Participants: Undergraduates (n=208) completed food journals and validated questionnaires assessing mental health, eating behavior and diet quality (HEI). Students were predominantly female (93.5%) and Hispanic (75.8%)

Statistical Analysis: Descriptive and correlations were analyzed using SPSS V26.0. Results were considered significant at p<0.05.

Results: Some students experienced moderate/severe depression (18%), anxiety (20.5%), and stress (3.0%). Depression was negatively associated with added sugars (r=−0.135, p<0.037) and positively associated with Emotional Eating (EmE) (r=−0.239, p<0.001) and External Eating (ExE) (r=−0.178, p<0.05). Anxiety was negatively associated with fatty acids (r=−0.135, p<0.020) and positively associated with ExE (r=−0.231, p<0.003) and ExE (r=−0.145, p<0.024). Stress was positively associated with EmE (r=−0.192, p<0.003) and ExE (r=−0.142, p<0.030). Among eating behaviors and diet quality, restrained eating was positively associated with dairy (r=0.048, p<0.001) and negatively associated with seafood/plant proteins (r=−0.187, p<0.006), green beans (r=−0.130, p<0.047), saturated fats (r=−0.154, p<0.017), and overall diet quality (r=−0.171, p<0.013). EmE was negatively associated with total fruits (r=−0.149, p<0.021), seafood/ plant proteins (r=−0.134, p<0.039), fatty acids (r=−0.129, p<0.046), saturated fats (r=−0.180, p<0.048), and overall diet quality (r=−0.165, p<0.017). ExE was negatively associated with added sugars (r=−0.134, p<0.039).

Conclusion: Adverse mental health and eating behaviors may affect diet quality. Healthy foods such as fruits and vegetables were less consumed with unfavorable eating behaviors.

Funding source: None

The Impact of Sustainability Education on College Students’ Meal Choices

Author(s): L. Henry1, C. Anstrom2; 1Central Michigan University, 2Olivet Nazarene University

Learning Outcome: Recognize sustainability education is a useful method in raising awareness of the impact of meal choices on a personal carbon footprint.

Background: Animal products are known to have a higher carbon footprint than plant-based alternatives. Although it is difficult to measure individual awareness of the environmental impact of the diet, a food frequency questionnaire is an effective tool for measuring food consumed and relating food intake to environmental sustainability. An infographic can be a useful way to relay sustainability education.

Methods: A quantitative design was used to determine if an educational infographic addressing the carbon footprint of certain foods impacted food choices, values and beliefs about food. An online survey created by Malan et al. (2020) was administered to 2,660 students, 61 completed both surveys. Data collection was completed by administering one survey two separate times, four weeks apart. Surveys were coded to match the first and second responses. The educational intervention provided at the end of the first survey used an infographic from Our World in Data displaying the carbon footprint of different foods. A paired samples t test was done to compare responses from the first and second survey.

Results: No statistical significance in the difference of students’ meal choice before and after the infographic was found. However, individuals demonstrated a decrease in green leafy vegetables consumed (M difference=−.6786, SE=.1857, t(3.7), p <.001).

Discussion: Absence of statistical significance suggests that an infographic alone is not an effective educational intervention to impact the meal choice of college students. The results demonstrate a need for more in-depth educational efforts to impact meal choice, values, and beliefs about food.

Funding source: None
The Low FODMAP Diet and a Sugar and Fiber Modulated Diet are Efficacious for Symptom Management in Irritable Bowel Syndrome

Author(s): V. Swaminathan1, A. Negri-Jimenez2, M. Nahialkian-Nelm1, K. Roberts1; 1The Ohio State University; 2The Ohio State University-College of Medicine

Learning Outcome: Understand the impact of a low FODMAP diet and a sugar and fiber modified diet on symptom management in irritable bowel syndrome.

Background: Irritable bowel syndrome (IBS) is a functional gastrointestinal disease affecting approximately 23% of the world population. IBS impairs quality of life and increases the healthcare burden. The low fermentable, oligo-, di-, and monosaccharide and polyol (FODMAP) diet is generally accepted for symptom management. However, its restrictive nature may risk nutritional inadequacy and unfavorable impacts on the gut microbiota. This study compares the efficacy of symptom management between the low FODMAP diet (LFD) and a less restrictive sugar- and fiber-modulated diet (SFMD) that is more consistent with the Dietary Guidelines for Americans.

Methods: Patients diagnosed with IBS were consented and randomized to an LFD or SFMD. Dietary education was provided before a two-week intervention. A health questionnaire, 3-day diet record, and an IBS-Symptom Severity Score (IBS-SSS) were completed at baseline and after the intervention.

Results: The preliminary findings describe the cohort (N=18) as predominantly females (64.7%), aged 22-74 years, with an average BMI of 29.9 kg/m². IBS-mixed was the most common presentation (64.7%). Diet records support intervention compliance with a significant increase in soluble fiber recorded in the SFMD and 93.8% self-reported compliance of diet after both interventions (p<0.001). However, there were no differences in the change in IBS-SSS among interventions (p=0.077).

Conclusion: Preliminary data supports overall symptom management significantly improved after education with a Registered Dietitian Nutritionist and did not differ between interventions. This suggests that a SFMD and LFD are both efficacious for symptom management in IBS.

Funding source: Funding supported through the Academy of Nutrition and Dietetics, Dietitians in Medical Nutrition Therapy.

The MIND Diet: Associations among Nutrient Intake, Metabolic Markers, and Cognitive Function

Author(s): T. Holthaus1, M. Kashfi, C. Cannavale1, C. Edwards1, S. Aguiñaga1, A. Walk2, N. Burd2, H. Holscher1, N. Khan1; 1University of Illinois Urbana-Champaign, 2Eastern Illinois University

Learning Outcome: Upon completion, participants will be able to examine the associations between sports nutrition knowledge and eating behaviors.

Methods: Participants (n=120) completed the Dietary History Questionnaire II. Venous blood samples were collected following an overnight fast and analyzed for nutrient intakes, metabolic markers, and cognitive functioning. Response and attentional inhibition were assessed using a Go/NoGo flanker task, respectively. Spearman's Rho (r) correlations and stepwise regression modeling with adjustment for significant covariates (i.e., age, sex, income, and total energy) were conducted.

Results: MIND diet score was positively associated with dietary lutein and zeaxanthin (β = 0.32, p < 0.001), omega-3 fats (β = 0.21, p < 0.001), and fiber (β = 0.18, p < 0.001). The MIND diet was positively associated with high density lipoprotein (HDL) concentrations (β = 0.20, p < 0.001) and inversely associated with systolic blood pressure (β = -0.20, p = 0.007), fasting blood glucose (β = -0.32, p = 0.004), and triglyceride concentrations (β = -0.39, p = 0.01). The MIND diet was positively and selectively associated with NoGo accuracy (r = 0.19, p = 0.02).

Conclusion: The MIND diet was related to lower adipose tissue (VAT). Response and attentional inhibition were assessed using a Go/NoGo task, respectively. No associations across the five SNKI subscales (Nutrients, Fluid, Recovery, Weight Gain, Weight Loss, and Emotional Nutrition) were found.

Funding source: Funding: This work was funded by the Department of Kinesiology and Community Health at the University of Illinois, Division of Nutritional Sciences, and Hass Avocado Board (Institutional Award Number 079273).

The Potential of Dietary Intervention in Preventing or Improving Symptoms of Depression

Author(s): A. Weeden, C. Norton, C. Byington; Idaho State University

Learning Outcome: Upon completion, participant will be able to describe the potential benefit of dietary interventions in the treatment of depression.

Background: Depression is a costly and debilitating disease for many. Interest in alternative and adjunctive therapies has grown as approximately 30% of patients do not improve with first-line treatment. This literature review aimed to identify the benefit of diet on depressive symptoms.

Methods: PubMed and Cinahl Complete were searched using the terms (diet AND intervention) AND (depression OR anxiety) AND (randomized OR crossover). Included studies (n=15) had at least 10 participants, comparable control/washout period, ≥ 2-week intervention, standardized depression measurement, and addressed the use of pharmaceutical therapy. Exclusion criteria included studies focused on the benefit of nutrient supplementation or had a dropout rate >30%.

Results: Nine studies showed dietary intervention had a positive effect on mild depressive symptoms. Dietary interventions that focused on a Mediterranean eating pattern or a general healthful eating pattern that increased polyphenol consumption showed the greatest improvement of some depressive symptoms. Studies that included a food box, meal plans, and nutrition counseling had better participant compliance.

Conclusion: While an overall healthful diet may be a generally safe and cost-effective adjunctive treatment strategy for the treatment of depression, a clear directional link is still missing. More research is needed before a specific dietary pattern can be recommended in the treatment of depression.

Funding source: None

The Relationship Between Adolescent Dancers’ Sports Nutrition Knowledge and Eating Behaviors

Author(s): S. Graham, K. Eck, J. Bodzio, K. Tullio, L. Howard; Marywood University

Learning Outcome: To examine the associations between sports nutrition knowledge and eating behaviors of adolescent dancers.

Background: Adolescent dancers may feel pressure to obtain specific body types and as a result, may adopt disordered eating behaviors. Sports nutrition knowledge is often limited in adolescents and poor knowledge may contribute to disordered eating. This study examined relationships between dancers’ sports nutrition knowledge and eating behaviors.

Methods: Dancers were recruited from a studio in Pennsylvania to complete an online survey containing the six Sports Nutrition Knowledge Inventory (SNKI) subscales (Nutrients, Fluid, Recovery, Weight Gain, Weight Loss, and Supplements), and the Eating Attitudes Test-26 (EAT-26) assessing eating behaviors. SNKI items were summed (-1 for incorrect, 0 for unsure, and 1 for correct answers), creating total and subscale scores. Items in the EAT-26 were scored never (0 points) to always (3 points). Item scores were summed (range 0 to 78); scores above 20 are indicative of possible disordered eating.

Results: Dancers (n=13) were female Caucasians between 14 and 18 years old. The average SNKI score was 10.08±9.80 (range -88 to 88) with an average percent correct of 47.99±6.96, with participants answering the greatest percent correct on the Nutrient scale and the lowest percent correct on the Supplement scale. The mean EAT-26 score was 8.54±7.04. Pearson correlations indicated no significant (p>0.05) correlations between EAT-26 scores and the SNKI total or subscale scores.

Conclusions: Although sports nutrition knowledge and eating behaviors were not correlated in this sample, additional research is needed in a larger, more diverse sample to determine the relationship between sports nutrition knowledge and eating behaviors in adolescent dancers.

Funding source: None
The Contributing Food of FODMAPs in Korean Adults with IBS

Author(s): W. Na, C. Sohn, Y. Lee, H. Kim; Wonkwang University

Learning Outcome: Upon completion, participant will be able to describe.

There are not many reports on the intake of Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polypeptides (FODMAPs) in Korean subjects. Therefore, in this study, we analyzed the intake of FODMAPs and contributing foods in Korean adults with IBS.

We performed an internet-based survey on 1,000 persons in their 20s–40s from April to August 2020. Among the 870 persons without missing values, the data of 118 diagnosed persons with ROME III were analyzed. For the dietary intake assessment, a food frequency questionnaire (FFQ) consisting of 118 food items was used. Daily intake of FODMAPs was calculated by using the food composition database, which was open-access National Food Ingredient Standard 9.2. ANCOVA was used for analysis according to gender, and the covariates were age, energy intake, and BMI.

The subjects of the survey were 78 males and 109 females and the age was 32.5±7.04 years, 29.0±7.31 years (p=0.024), respectively. The results of analyzing the top items of food contributing to total FODMAPs by gender were as follows. In male, milk (2.86 g/d), garlic (1.41 g/d), onion (1.23 g/d), green and onion (1.06 g/d) were found in that order. In female, milk (4.06 g/d), green onion (1.15 g/d), onion (1.07 g/d) and pear (0.82 g/d) were found in that order.

The ranking of contributing foods of FODMAPs was different from that of Westerners. Also, the types of contributing food sources of FODMAPs differed significantly according to gender. Therefore, it is necessary to make dietary guidelines taking into account gender for Korean IBS patients.

Funding source: This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea Government (MSIP) (No.NRF-2020R1A2C1014177)

The Effect of Follow Up Diet Education Calls Post Discharge on Inpatient Heart Failure Readmission Rates

Author: A. Vieira; Sodexo

Learning Outcome: Upon completion, participants will be able to describe the impact of follow up nutrition education calls utilizing teach-back techniques on readmission rates in heart failure patients.

Background: Heart failure readmission rates affect both patient care and hospital reimbursement. The goals of this study were to provide reinforce- ment with low sodium diet education for heart failure patients and reduce 30-day heart failure readmissions for patients discharging home.

Methods: Patients admitted to the hospital for heart failure were divided into two groups of 15 patients for a total of 30 patients. Both the intervention and the control group received similar low sodium diet education by a registered dietitian and were provided contact information for the dietitian team. The intervention group received additional education and assessment of diet comprehension through follow up calls one week and two weeks after discharge. Patients were followed 30 days post discharge to evaluate for readmission.

Results: Two patients (13%) were readmitted in the intervention group and neither had active heart failure issues, while six patients (40%) were readmitted in the control group. Only five out of 14 (36%) non-readmitted patients expressed comprehension of all learning points during the first follow up call. By the time of the second call, 11 out of 13 (84%) patients who had not been readmitted were able to express comprehension of all learning points while one patient had been readmitted prior to the second phone call.

Conclusions: Follow up calls were an effective method to prevent 30-day readmissions for heart failure patients. Study participants demonstrated an improvement in diet knowledge and comprehension between follow up calls.

Funding source: None
The Impact of Social Media on Dietary Behaviors of College Students: A Qualitative Approach

Author(s): T. Lopez, B. Boutros, T. Brodeur, D. VanderKaat, V. Browning – Keen; Sam Houston State University

Learning Outcome: Upon completion, participants will be able to describe the impact of social media on dietary behaviors of college students.

Objective: To examine impact of social media on the dietary behaviors of college students.

Methods: A cross-sectional qualitative study of three focus groups, approximately 60 minutes each, were conducted with 18 college students (12 females). The focus groups were based on guiding open-ended questions. Focus groups were recorded, transcribed, and coded using the Grounded Theory by Corbin and Strauss (2015). The transcripts were coded in 3 phases: open, axial, and selective coding. Atlas.ti was used to analyze the data.

Results: Three main themes emerged from the data including conditions, actions, and consequences. The themes were identified based on the frequency of statements mentioned by the participants. Conditions included perceived elements like social media influencers, social media misinformation, and social media platforms that participants gave for why and how social media influence their diet behavior and body image. Actions included elements that shape their action-interaction to the conditions. These included eating behavior, physical activity, and dietary supplement intake. Consequences included anticipated or actual outcomes of action and interactions such as body image, ideal weight, and positive/negative social media influence. View on the influence of social media varied, but most believed social media had a negative influence on dietary behaviors.

Conclusion: The results of this study highlight the ramifications of nutrition misinformation on social media platforms. The results will help identify how social media platforms can be effectively used to influence healthy weight through inclusion in regulations and policies developed to limit exposure to unhealthy food marketing and nutrition misinformation.

Funding source: FAST Award Program by the Center for Enhancing Undergraduate Research Experiences and Creative Activities at Sam Houston State University. Funding: $8,000.

The Influence of Elexacaftor-Tezacaftor-Ivacaftor on Body Mass Index Distribution in Pediatric and Adult Patients with Cystic Fibrosis

Author(s): L. Alberts1, J. Ponce1, M. Jackson1, B. Bice2, H. Klasna2, M. Timmerman1, C. Hanson1; 1University of Nebraska Medical Center, 2Nebraska Medicine

Learning Outcome: Upon completion, participants will be able to describe the relationship between Trikafta and nutritional status, and the many nutrition complications that come with Cystic Fibrosis.

Background: Cystic Fibrosis (CF) is a genetic disorder that affects pulmonary function and causes severe nutrition complications. Elexacaftor-tezacaftor-ivacaftor (Trikafta) has shown significant improvement in pulmonary function, as well as body mass index (BMI) after 4-24 weeks from prior studies. A current gap in the research is if Trikafta can improve nutritional status long-term.

Methods: This retrospective cross-sectional study looked at patients with CF who took Trikafta for 18 months. ANOVA with Tukey post-hoc test was used to determine significant differences in BMI distribution between multiple time points and baseline. BMI groups were divided into “Acceptable”, “At-Risk”, “Failure”, and “Obesity”. A significance level was set at p < 0.05.

Results: The final analysis included 158 CF patients (114 adults, 44 pediatric patients). Adult patients had significantly different BMI distributions between baseline and 18-months [Acceptable: 43% vs 26.3%; At-Risk: 22.8% vs 5.3%; Failure: 17.5% vs 1.8%; Obesity 15.8% vs 13.2% (p < 0.001)]. Pediatric patients had no statistically significant differences in BMI distribution from baseline to 18-months (p = 0.411), however the acceptable group remained to have highest distribution throughout the 18 months (Acceptable: 56.3% vs 54.2%; At-Risk: 22.9% vs 14.6%; Failure 12.5% vs 8.3%; Obesity: 0% vs 8.3%).

Conclusion: This study highlights clinically important observations in BMI distribution over 18 months of Trikafta use, especially highlighting a decrease of patients in the at-risk and failure groups from baseline to the end of the study. These preliminary findings should promote further investigation of BMI and nutritional status with long-term Trikafta use.

Funding source: None

The Relationship Between Orthorexia Nervosa, Eating Disorders and Obessions in Dietitians in Turkey

Author(s): U. Guven Nehir1, S. Orun1; 1Ummu Guven Nehir Healthy Nutrition and Diet Center, 2Menemen State Hospital

Learning Outcome: This study described the prevalence and the relationship between orthorexia nervosa, eating disorders and obsessions in dietitians in Turkey.

Orthorexia nervosa (ON) is defined as an unhealthy obsession with healthy eating and avoiding foods that are considered unhealthy. ON is a common symptom among dietitians.

The research is a descriptive study. 85 female and 29 male dietitians participated. Orthorexia Nervosa Questionnaire ORTO-15, Eating Attitudes Test-40 (EAT-40), Maudsley Obsessive-Compulsive Inventory (MOCI) and a questionnaire determining the socio-demographic information was applied. Independent t-test was used to assess differences in group means. The relationship between test scores was determined using Pearson’s correlation coefficient.

Among participants 74.6% were female and 25.4% were male, and the mean age was 31 ± 9.8 years. The mean BMI was calculated as 22.4 ± 3.4 kg/m2. The mean ORTO-15 test score was calculated as 38.3 ± 3.5. In addition, 43.7% of the dietitians scored below 40 points in the ORTO-15 test, with an average 35.6 ± 5.4 points. The mean EAT-40 score of the participants was 13.5 ± 7.9, while 15.7% scored over 21 points in EAT-40 (6% over 30 points). Moreover, the mean overall score for the MOCI was calculated as 12.4 ± 5.8. It was found that the participants with ORTO-15 scores less than 40 had significantly higher scores for EAT-40 and MOCI (p < .05). The results showed a statistically significant negative correlation between the ORTO-15 scores and EAT-40 scores and BMI values (p < .05). We found that 43.7% of the dietitians are at high risk of ON, and this higher risk may be related with OCD and eating disorders.

Funding source: None

Therapeutic Action Elicited by The Probiotic L. Rhamnosus GG in Children with Atopic Dermatitis - Results from the Propad Trial

Author(s): L. Carucci, P. Capasso, S. Coppola, M. Lettieri, L. Voto, A. Luzzetti, R. Nocerino, R. Berni Canani; University of Naples "Federico II"

Learning Outcome: Upon completion, participant will be able to demonstrate the efficacy of the probiotic L. rhamnosus GG (LGG) in pediatric subjects affected by atopic dermatitis.

Background: Atopic dermatitis (AD) is a long-standing inflammatory skin disease that affects up to 20% of children in Western countries. AD is associated with aberrant barrier functions of the skin and gut microbiome. The PropAD study aims to investigate the efficacy of the probiotic L. rhamnosus GG (LGG) on disease course, skin and gut microbiome of children with AD.

Methods: 91 children with AD (both sex, age 6-36m) were randomized in a double-blind placebo-controlled trial to receive placebo (GroupA) or LGG 1x1010 CFU capsules daily (GroupB) for a 12-week treatment. Main study outcome was the evaluation of therapeutic efficacy of LGG supplementation on AD severity comparing SCORAD index between baseline(T0) and 12-week treatment(T12). Days without use of rescue medication and changes in Infant Dermatitis Quality of Life Questionnaire (IDQOL) were also evaluated. Fecal and skin (cotton swab) microbiome sampling was carried out at T0 and at T12. Samples were evaluated with 16SrRNA-based approach for bacteria.

Results: From T0 to T12 a reduction of SCORAD index was observed in both groups, with a significantly higher reduction in GroupB (p < 0.001). The number of days without rescue medications was significantly higher in GroupB. IDQOL score, significantly improved from T0 to T12 in the GroupB (p < 0.05). A beneficial modulation of skin and gut microbiome was observed only in patients enrolled in the GroupB.

Conclusions: These data support the potential of the probiotic LGG approach as adjunctive strategy in pediatric patients affected by AD. The beneficial effects on disease severity and quality of life paralleled with a beneficial modulation on microbiome.

Funding source: The trial was supported by an unrestricted grant from DSM I- healt inc., Cromwell, United States of America
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<td>Understanding Factors Associated with Catheter Line-Associated Bloodstream Infections</td>
<td>R. Hallak¹, M. Nahikian-Nelm¹, A. Chiplunker¹, K. Roberts¹; ¹The Ohio State University, ²The Ohio State University Wexner Medical Center, Division of Gastroenterology, Hepatology, and Nutrition</td>
<td>Upon completion, participant will be able to identity factors associated with catheter line-associated bloodstream infections.</td>
<td>Catheter-line associated blood stream infections (CLABSiS) are a life-threatening complication related to the use of home parenteral nutrition (HPN). Using silicon-based catheters with few lumens and ethanol lock therapy (ELT), have been suggested to improve the management of vascular access devices (VADs) and reduce CLABSiS rates.</td>
<td>The use of non-silicone-based catheters and the absence of ethanol lock solutions is associated with CLABSiS in those on HPN.</td>
<td>A retrospective chart review (N = 39) of patients on HPN from September 2016 to September 2021 were included. All subjects were followed by a gastroenterologist and dietitian team and was utilizing a long-term VAD for HPN and/or home intravenous fluid (HIVF) therapies.</td>
<td>Ninety-six VADs were included. A total of 82 CLABSiS-related admissions were recorded and 52 positive CLABSiS were identified from those admissions. When CLABSiS were identified, the VAD was removed in 96% of the cases. Insertion of non-silicon based VADs (86.7%) accounted for most catheters. Average usage days of catheters was higher for silicone based VADs compared to non-silicone based VADs. There was a positive correlation with CLABSi as the number of lumens increased (P &lt; 0.001). More than 69% of catheters had 2 or more lumens. Usage of ELT was confirmed in only 9 cases with very limited documentation on the use of lock therapies.</td>
<td>Several factors play a role in the management of VADs. Educating healthcare team members on appropriate VAD selection and use of ELT may reduce CLABSi episodes and improve care of those on HPN/HIVFs.</td>
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<td>Use of the Simplified Diet Method to Improve Metabolic Control Among Teens and Adults with Phenylketonuria: A Mixed Methods Approach</td>
<td>J. Skrabal, W. Rizzo, C. Hanson, A. Anderson-Berry, L. Bilek, R. Lutz; University of Nebraska Medical Center</td>
<td>Determine the effectiveness of the simplified diet method on metabolic control in teens and adults.</td>
<td>Phenylalanine hydroxylase deficiency, commonly known as phenylketonuria (PKU), is an inborn error of metabolism characterized by accumulation of phenylalanine (PHE), and results in intellectual disability if left untreated. The primary treatment for PKU is a lifelong diet that selectively restricts PHE intake. Individuals with PKU typically count the PHE content of foods to keep their blood PHE in the therapeutic range of 120-360 μmol/L. Qualitative research in PKU is limited, but research has stressed the need for PKU diet method improved metabolic control while easier. There is no significant difference in mean tyrosine levels or body mass index (BMI) while using a simplified diet method. Several positive attitudes towards the simplified PKU diet were observed. Primary themes on qualitative analysis included “awareness”, “ease of use” and “realistic.”</td>
<td>The use of PKU diet method improved metabolic control while easier.</td>
<td>Thirty PKU subjects, ranging in age from 13 to 50 years, participated in a convergent parallel mixed methods study with a crossover design using matched historical controlled quantitative data and a case study approach for qualitative data collection. Subjects were instructed on a simplified diet approach consisting of dietary protein counting and encouraged use of free use of fruits and vegetable containing &lt; 50 milligrams PHE per 100 grams food or less per serving. Subjects were also asked open-ended questions about their attitudes towards this new counting system.</td>
<td>At baseline, PHE levels from the previous year averaged 666 μmol/L; while after the simplified diet intervention, mean PHE levels decreased to 562 μmol/L (p &lt; 0.003). There was no significant difference in mean tyrosine levels or body mass index (BMI) while using a simplified diet method. Several positive attitudes towards the simplified PKU diet were observed. Primary themes on qualitative analysis included “awareness”, “ease of use” and “realistic.”</td>
<td>A simplified PKU diet method improved metabolic control while easier.</td>
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<td>Weight Status Outcomes among Oncology Patients Seen by Registered Dietitian Nutritionists</td>
<td>H. Kirtley¹, M. Jackson¹, S. Nessetti¹, J. Ponce¹, M. Timmerman¹, C. Hanson¹; ¹University of Nebraska Medical Center, ²Nebraska Medicine</td>
<td>Upon completion, participants will be able to describe nutritionally at-risk oncology patient populations and RDNs’ roles in promoting weight maintenance.</td>
<td>Background: Type 2 diabetes affects more than 26 million Americans. Prebiotics and probiotics are gaining attention due to their role in improving glycemic control benefitting those with diabetes. Yacon (Smallanthus sonchifolius) is a tuberous root native to the Andes which is rich in inulin and fructose oligosaccharides (FOS) and shown to improve glycemic control.</td>
<td>A quantitative and qualitative sensory evaluation and Likert scale survey were used to rank and evaluate the product and variations.</td>
<td>A retrospective chart review analyzed oncology patients who met with RDNs over a 12-week period at a midwestern outpatient cancer center. The primary outcome was weight change. Weight maintenance was defined as within 7.5% of baseline weight, based off malnutrition diagnosis criteria.</td>
<td>Thirty patients were included. Patients were randomized to one of three groups: a control group, a dextrin group, and a yacon group. The dextrin group consumed a variation containing dextrin, the yacon group consumed a variation containing yacon. The control group consumed a variation containing neither.</td>
<td>Conclusions: A mixed treatment may be an acceptable choice for those wanting to improve glycemic control and may assist those with type 2 diabetes.</td>
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<td>Utilization of Prebiotics and Probiotics in the Development of Food Products Beneficial for Those With or at Risk of Developing Type 2 Diabetes</td>
<td>D. Filand, G. Morote Galvez, S. Mitchell Urich, T. Smith; Missouri State University</td>
<td>Upon completion, the participant will be able to name two prebiotic/probiotic foods or ingredients successfully incorporated into a salsa and which have been shown to help improve glycemic control.</td>
<td>Background: Type 2 diabetes affects more than 26 million Americans. Prebiotics and probiotics are gaining attention due to their role in improving glycemic control benefitting those with diabetes. Yacon (Smallanthus sonchifolius) is a tuberous root native to the Andes which is rich in inulin and fructose oligosaccharides (FOS) and shown to improve glycemic control.</td>
<td>A quantitative and qualitative sensory evaluation and Likert scale survey were used to rank and evaluate the product and variations.</td>
<td>Three versions of fruit salsa were developed: a control, one including dextrin, a glucose oligosaccharide, and a variation containing yacon powder. Additionally, each of the variations included a 10 strain, 100 billion cfu probiotic supplement.</td>
<td>The control salsa’s acceptability score was a 4.0/5, the salsa with added yacon scored 3.93/5, and the dextrin containing sample scored a 4.18/5. More than 70% of panelists stated they would consume the salsas containing dextrin and yacon. 84% were pleased the product contained prebiotics, and 93% were pleased to know products contained probiotics.</td>
<td>A mixed treatment may be an acceptable choice for those wanting to improve glycemic control and may assist those with type 2 diabetes.</td>
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<td>Poster Session: Clinical Care; Communications; Critical Thinking and Decision Making: Ethics and Professionalism; Food, Nutrition and Dietetics and Physical Activity; Leadership and Advocacy</td>
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**JOURNAL OF THE ACADEMY OF NUTRITION AND DIETETICS** A-31
What is the Connection Between Weight Inclusivity and Sexual Health?

**Author(s):** K. Hicks-Roof, R. Zeglin, N. Quinn, C. Boggs, H. Glusenkamp, M. Rule, K. Terrell; University of North Florida

**Learning Outcome:** Upon completion, participants will be able to identify the connection between weight inclusivity and sexual health.

**Research outcome:** Sexual health research has been absent in connecting sizeism to sexual health. The purpose of this study was to describe the sexual health research landscape with respect for weight inclusivity.

**Methods:** A thorough literature was conducted using three databases (Google Scholar, Medline and Ebsco) to find articles from 2010-2020. Keywords used in the search included obese, fat, obesity, overweight, sexual dysfunction, sexual desire, sexual issues, sexual satisfaction, and sexual function. Using a deductive summative content analysis, researchers independently coded articles whether they embodied each tenant of the weight inclusive model. Additionally, reviewers independently identified components of a 4-factor sexual functioning model.

**Analysis:** Each article was double coded for weight inclusive tenants and sexual functioning tenants. A crosstabulation table was then created to describe the content analysis.

**Results:** Sixty-seven articles met the criteria and were included in analysis. A total of 196 sexual functioning components were addressed and 32 weight inclusive tenants across all articles. Articles were most weight inclusive when discussing sexual satisfaction (22.5%). Meanwhile, when discussing sexual arousal, it was the least weight inclusive (16.4%).

**Conclusions:** Weight inclusivity and sexual health should go hand-in-hand, yet the literature does not embody tenants from both models. Health bias and weight stigma are widely prevalent across healthcare, including sexual health, the antithesis of sex and body positivity. These findings suggest there is needs to be greater education and intention for dietitians, sex educators and therapists to explore and enhance body positivity and sexual health.

**Funding source:** None

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“It’s not worth it”: Associations Between the Effort Mothers Perceive is Needed to Get Children to be Physically Active and Child Health, Behavior, and Home Environments

**Author(s):** C. Delaney, C. Byrd-Bredbenner; Rutgers, The State University of New Jersey

**Learning Outcome:** Describe differences in child health, physical activity and home environments of mothers who do and do not believe “it’s worth the effort” to get children (6-11y) to be physically active.

The effort mothers feel is needed to get children to engage in healthy behaviors and child health is unstudied. Thus, 531 mothers reported whether they felt it was worth the effort the get their children to be physically active using a 5-point agreement indicator item. Child health status and physical activity (PA) level, and home PA environments of mothers agreeing it was worth the effort (n=202) were compared with those feeling otherwise (n=329) using one-tailed Student’s t-tests. Analyses revealed “Not-Worth-It” mothers had children with higher BMI percentiles (67th vs 62nd) and significantly (p<.05) worse health status (3.09±0.82SD vs. 3.47±0.79SD, 4-point scale) than “Worth-It” mothers. The 42-point PA level scale indicated children of Not-Worth-It mothers got significantly less PA (19.86±11.80SD vs. 23.15±12.74SD) than comparators. Sedentary screen time behaviors averaged about 4 hours for both groups. Five-point scales assessing home PA environments revealed Not-Worth-It mothers had significantly less space and supports for PA inside their homes (3.67±0.81SD vs. 4.05±0.91SD), in the yard outside their homes (4.11±0.70SD vs. 4.62±0.53SD), and neighborhood (3.45±1.01SD vs. 3.53±1.38SD) than comparators. Not-Worth-It mothers also perceived their neighborhoods to be significantly less safe (3.60±1.04SD vs. 3.77±1.39SD) than Worth-It mothers. The higher BMI percentile, poorer health, and lower PA level of children of Not-Worth-It mothers likely reflects barriers associated with environments less supportive of PA. Future nutrition interventions should provide mothers with simple strategies that make it less effortful for mothers and easier for children to engage in PA, especially in home environments with limited space and supports for PA.

**Funding source:** United States Department of Agriculture, National Institute of Food and Agriculture grant numbers 2011-68001-30170 and 2017-680001-26351
Monday, October 10

Poster Sessions
Collaborative Implementation of Malnutrition Screening for Cancer Patients

Author(s): M. Laszlo, A. Provizer; Cedars Sinai Medical Center

Learning Outcome: Describe how to collaborate with other clinicians to implement a nutrition referral process in an ambulatory care clinic

Objective: To assess the feasibility of using the Malnutrition Screening Tool (MST) in the electronic medical record (EMR) as part of RN Navigator workflow in one ambulatory oncology clinic.

Use of theory: Model for Improvement (MFI) Target Audience: RNs, MDFs, and Administrators Program Description: The MST was implemented as part of the RN Navigator workflow for all new patients in our Gastrointestinal Oncology Clinic. Our aims were to increase patient access to early intervention with an RN and align our referral process with the 2020 Commission on Cancer Standards for Nutrition Services.

Method of Evaluation: MST scores were documented in the EMR. Patients with a score > 2 triggered a physician order referral to RD. Patients seeking a second opinion or pursuing care elsewhere were excluded.

Results: The clinic screened 141 patients using the MST. Twenty-two patients were excluded from referral. Of the remaining 119 patients, 53 had MST score >2 and were referred to the RD. Of the 53 patients with scores >2, 23 patients met ASPEN criteria for malnutrition, as evaluated by RD. Prior to MST, most referrals were communicated by RNs without an MD ordered referral or standardized referral process.

Conclusion: Implementation of the MST was instrumental in identifying high-risk patients for referral to RD. With the steady increase of clinic patient volumes, this screening process ensures patients are prioritized for RD assessment. This project informs future direction and collaboration with RN leadership to expand and automate the use of the MST in other clinics.

Funding source: None

Effects of One Drop Habit Labs Education on Self-Management Skills and Confidence in People Living with Type 1 Diabetes

Author(s): A. Stelzer, L. Goldoor, L. Vettleson, L. Sears, L. Lavaysse, J. Huy-Rosas, J. Dachis; One Drop, Informed Data Systems

Learning Outcome: Describe an effective mHealth educational program aimed to improve participant confidence and understanding of a diabetes self-management topic.

Background: To optimize the learning experience of individuals living with type 1 diabetes, experts recommend tailoring an education program to meet an individual’s unique needs. We tested the effects of an education-based intervention, Habit Labs (HL), administered through One Drop’s digital health platform on improving self-management skills and confidence.

Methods: HL is a four-week coaching program that provides one educational content piece and multiple discussion prompts each week during the program. Our first session had the goal of increasing member knowledge and confidence around eating and insulin bolusing for carbohydrates. Pre-post surveys were used to evaluate change in self-rated knowledge and confidence in self-management, as well as satisfaction with the overall program.

Results: Of the 18 participants enrolled, 10 completed both the pre- and post-program surveys. The overall program received an average rating of 4.6/5.0, with helpfulness of content rated 8.5/10 and helpfulness of discussion prompts rated 9.3/10. Self-reported knowledge of how carbohydrates affect blood sugar improved (from 70% to 90%), confidence increased for carbohydrate counting (from 60% to 80%), matching insulin to carbohydrates at meals (from 60% to 80%), and use of paired testing (from 50% to 90%).

Conclusions: Our results suggest that a structured, educational intervention delivered within a comprehensive mHealth program like One Drop is an effective way to improve participant understanding and confidence in diabetes self-management topics.

Funding source: All authors are employed by One Drop, Informed Data Systems.

Embracing the Virtual Care Paradigm: Dietitians Preference and Increased Utilization of Telehealth

Author(s): M. Myers, L. Russo, B. Jordan, C. Stella; Memorial Sloan Kettering Cancer Center

Learning Outcome: Upon completion participants will be able to describe the roles Registered Dietitian Nutritionists (RDNs) play in providing successful virtual nutrition counseling for oncology patients during the COVID pandemic and beyond.

The COVID-19 pandemic posed challenges to providing in-person nutrition counseling to patients. Recognizing uncertainty and the changing needs of patients, RDNs at Memorial Sloan Kettering Cancer Center began a department-wide telehealth program, as an option for ambulatory patient nutrition counseling. The RDNs were offered self-paced online learning modules and remote instruction to gain competency with using telehealth. Research has shown effectiveness and patient satisfaction with telehealth (1,2) but RDN satisfaction is not well known. The goal of this project was to develop dietitian competency, and to determine satisfaction with telehealth. Surveys were given to the RDNs (n=15) to evaluate their satisfaction. 100% of RDNs reported the telehealth program to be beneficial: 100% prefer telehealth to on-site visits, and 67% of found it saved time. RDNs were satisfied with the quality of the visual image and audio sound (73%); were very satisfied with their ability to provide education successfully (87%); were very satisfied (60%) and satisfied (40%) with personal comfort using telehealth; and (93.3%) were very satisfied with the overall telehealth experience. There were no telehealth visits scheduled in January 2021, and 253 telehealth visits scheduled in January 2022, representing a 322% increase. RDNs were extremely satisfied with the telehealth program, and successfully transitioned to and increased utilization of virtual care. Data collection continues for patient satisfaction and clinical outcomes for the program. These results highlight a strong RDN preference for telehealth and suggest it may become a permanent part of the nutrition care paradigm.

Funding source: None

Evaluating the Delivery Method of a MyPlate Nutrition Education Class

Author: S. Martin; New Mexico State University

Learning Outcome: To evaluate the effectiveness of an online MyPlate nutrition education class, compared to the face-to-face and hybrid versions offered at a Southwest state university.

Objective: To evaluate the effectiveness of an online MyPlate nutrition education class, compared to the face-to-face and hybrid versions offered at a Southwest state university.

Methods: MyPlate nutrition education classes focused on increasing fruit and vegetable consumption, healthy fats, portion sizes, and building healthier eating styles were offered at a Southwest state university’s campus from the fall of 2018 to the fall of 2021. Classes were held for 3 weeks (one-hour sessions weekly); all participants were given an identical 20-question posttest one week after the last class to assess retention of knowledge gained over the 3-week course (n=447). Descriptive statistics were used to quantitatively summarize assessment scores; ANOVA was used to compare mean differences between groups.

Findings/Outcomes: Overall, mean assessment scores of participants taking the online course and in-person courses were the highest (87.1%) and (86.9%) respectively, while participants in the hybrid class had a mean assessment score of 83%. A statistically significant difference was noted between the hybrid and in-person assessment and retention scores (p<.0001) and online and in-person assessment and retention scores (p=.025).

Conclusion and Implications: Providing face-to-face, online and hybrid nutrition education classes provides a flexible learning environment, but also has the potential to reach a wider audience, while still meeting the needs of our community with important skills that have the potential to improve health throughout life. Evaluating the delivery method of this class provides valuable quantitative and qualitative data that will assist facilitators with determining how to improve and strengthen the quality and effectiveness of this class.

Funding source: None
### Examination of Data Analysis Methods on Behavioral Changes in the PA SNAP Ed/Eat Right Philly Program: Eight years of Data and Analysis Techniques

**Author(s):** K. Schofield, J. Ensslin, M. Bruneau, J. Quinlan; Drexel University

**Learning Outcome:** Upon completion, participants will be able to describe how multiple methods of data analysis can inform and strengthen evaluation data for SNAP-Ed providers.

Drexel University’s Eat Right Philly Nutrition Education Program (DRX ERP), a Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) partner, provides nutrition education in schools throughout Philadelphia, PA. Drexel collects yearly pre and post data regarding behavior change among students who receive the curriculum. A retrospective study was conducted to evaluate changes in behavior from 2013 through 2021. Effectiveness of the curriculum in high school students, was determined using the Modified Youth Risk Behavior Surveillance System. Previous research using pre and post behavior found significant positive changes in youth behavior between 2013 – 2015 (p < .05). To substantiate the effects of DRX ERP in research presented here, paired samples t-tests, between 2016 – 2021 showed improvements in youth health behaviors. Students increased vegetable consumption between 2016-2017 (p < .001), 2018-2019 (p < .011) and 2020-2021 (p < .032). Students showed significant positive behavior change in fruit (p < .001), and fruit juice consumption (p < .001), during 2016-2017. Chi-Square analyses identified meaningful effect size changes after versus before DRX ERP for behavioral change. 2019-2020 showed no significant p values, but effect size showed changes ranging from small to large impacts for measured variables. Effect size metrics of pre and post behavior change to DRX ERP provide evidence of the program’s utility in meeting outcome indicators of the SNAP-Ed Framework. However, long term studies are needed to determine if these methods should be modified for more equitable measurements of behavior change. Findings indicate that effect size measurement may better elucidate how nutrition education impacts behavior change in ways that p-values are limited.

**Funding source:** This material was funded by USDA's Supplemental Nutrition Assistance Program (SNAP) through the PA Department of Human Services (DHS).

### Navigating the Perfect Storm: Staffing Crisis During the Pandemic

**Author(s):** M. Faura, A. Flickinger, K. Procaccino; Sodexo

**Learning Outcome:** Upon completion, participant will be able to implement successful solutions to combat increased hospitalizations and the national staffing shortage of dietitians through the pandemic.

With increasing inpatient volumes, increased medical complexity of patients and staffing below labor budget, our ability to provide patient care was compromised. As leaders we utilized data and facts to drive decisions. Staffing was 15% below budgeted labor and patient volumes were exceeding 130% of projected census across 5 locations. It was our goal as the nutrition leadership team to address this staffing crisis in a proactive manner to curb the magnitude of the storm. A team brainstorming session was conducted to identify strategies to provide quality care for our patients and prevent staff burnout. A rapid improvement event was held resulting in a streamlined electronic nutrition assessment to improve charting efficiency. Outreach to recently separated employees occurred to ascertain interest in working remotely as a per diem dietitian utilizing telehealth technology. Staff were incentivized with a bonus to work additional hours and for traveling to a hospital location one hour from the main hospital. With the program implemented, the team achieved a charting compliance of 96%. In addition, the team supported optimizing quality of nutrition care for Covid-19 patients by updating practice guidelines. These practice guidelines will be featured at the upcoming ASPEN 2022 conference poster session. In conclusion, the team felt valued and appreciated which resulted in improved morale, trusting work environment and a willingness to weather the storm as a united front.

**Funding source:** None

### Implementing and Evaluating Reflective Learning in a Medical Nutrition Therapy Lecture-Lab Course

**Author(s):** K. Stearns-Bruening, J. Burrell; Syracuse University

**Learning Outcome:** Assess student learning formatively using a brief, written reflective learning assignment

Reflective learning is a component of ACEND’s Future Education Model that promotes “deep” learning via metacognition, ongoing improvement in performing professional tasks and behaviors, and safe and competent patient/client care, when practiced regularly. Learners (N=46) completed 345 written learning reflections (LR) answering 7 questions for selected learning activities in medical nutrition therapy (MNT) lecture-lab courses as a formative assessment strategy. Results showed that 72% (249) of LRs indicated students’ progress in achieving planned learning outcomes; 14% (47) demonstrated connections across content within the course; 2% (8) made connections to content in a different course in the curriculum; and 2% (6) indicated that students identified strategies for future learning and practice. Seventeen LRs (5%) evinced that students misunderstood or omitted critical concepts, providing an opportunity for instructor corrective feedback. Thirteen LR (4%) indicated that students extended learning beyond the planned learning outcomes. Thirty-one LRs (9%) provided no evidence of learning or a lack of engagement with the reflective learning process. Based on faculty analysis of these findings and student input, we revised the LR questions for use in the current academic year and created a rubric to grant credit for engagement in reflective learning. Implementing reflective learning allowed effective formative assessment of student learning progress.

**Funding source:** None

### The Registered Dietitian’s Role in Increasing Patient Participation in Hospital Room Service

**Author(s):** K. Morales1, L. Paren2, S. Juliano1, A. Mojica2, S. Wechsler2, E. Glass2; 1Johns Hopkins Bayview Medical Center, 2Johns Hopkins Health System

**Learning Outcome:** Identify root cause for low participation of available meal service selection Describe methods to increase patient participation in room service by 50%

Research has shown that a room service (RS) model for hospital patient meal service has the ability to improve patient experience. The foundation of RS is that patients are given a restaurant-style menu where they can order a meal of their choosing, in an on-demand fashion. Patient meals are made to order that patients are given a restaurant-style menu where they can order a meal of their choosing, in an on-demand fashion. Patient meals are made to order and not the traditional non-select (NS) or limited-selection menus of the past. Research has shown that a room service (RS) model for hospital patient meal service has the ability to improve patient experience. The foundation of RS is that patients are given a restaurant-style menu where they can order a meal of their choosing, in an on-demand fashion. Patient meals are made to order and not the traditional non-select (NS) or limited-selection menus of the past.

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**Funding source:** None
Unmasked: Senior Dietetic Students Reveal Their COVID-19 Experiences through the Arts

Author: H. Huye; The University of Southern Mississippi

Learning Outcome: Upon completion, participant will be able to incorporate humanities activities into course content to enhance students' self-reflection and empathy skills.

The humanities and arts provide a unique perspective of the human condition related to physical and mental health. Through humanities activities, students can develop observation, empathy, and self-reflection related to physical and mental health. Through their self-reflections, students recognized a need for self-care and were able to empathize with patients/clients and make recommendations on how to cope if they were experiencing similar difficulties. Results of this exploration showed how incorporating humanities activities can help students engage in self-reflection and enhance empathy skills for future practice as well as give students a voice in an unprecedented time.

Funding source: None

Use of Design Thinking to Meet Knowledge Requirements of DPD programs

Author: E. MacQuillan; Grand Valley State University

Learning Outcome: Upon completion, participants will be able to implement a design thinking experience into DPD programs to meet new 2022 Knowledge requirement #5.5.

Design thinking has been used since the 1960s to collaboratively and creatively solve complex problems in many disciplines, including economics, engineering, and marketing. Problems related to food and nutrition are often multi-faceted and complex, and, therefore, provide an appropriate canvas for practicing design thinking skills, including empathy, collaboration, and iteration and testing of solutions to a problem. The 2022 ACEND standards introduce a new knowledge requirement, KRDN 5.5, “Promote team involvement and recognize the skills of each member.” The design thinking process represents an innovative way to ensure that DPD students meet the knowledge requirement through their participation in a practical, problem-solving experience. In Fall 2021, a new undergraduate course within the DPD program at Grand Valley State University was launched, requiring students to work in groups to gather data, ideate and iterate solutions, develop and test solutions, and finally to present a final prototype. Groups of 4-6 students each met to gather information from the campus dining administrators and campus registered dietitian about current issues of concern identified in the provision of food to students on campus. Next, student groups performed observations and conducted interviews with student users of the food vendors on campus. Brainstorming and iteration of solutions followed, with initial design ideas tested through focus groups with student users. Finally, revised design ideas were presented to members of the campus community. This project represents an idea for experiential learning that can be used by DPD programs to meet the new knowledge requirement through a unique problem-solving experience.

Funding source: None

Update of Competencies, Knowledge, and Skills for Effective School Nutrition Assistants/Technicians

Author(s): K. Rushing1, A. Rainville2; 1Institute of Child Nutrition Applied Research Division, 2Eastern Michigan University

Learning Outcome: Upon completion, participant will be able to describe the research process used to update competencies, knowledge, and skills for school nutrition assistants/technicians.

School nutrition (SN) assistants/technicians are the foodservice employees who work in a local SN program under the direction of an SN manager. This research to update the competencies, knowledge, and skills (CKS) needed by SN assistants/technicians was conducted in three phases with a diverse group of SN directors and supervisors (n = 41) from districts of varied sizes in all seven USDA Food and Nutrition Service regions as follows:

- Phase I included a literature review, four case study site visits, collection and review of job descriptions, and an electronic expert work group of SN directors (via email) whose members identified functional areas for SN assistants/technicians.
- Phase II included a face-to-face, expert work group tasked with developing CKS statements for the identified functional areas. The expert work group recommended six functional areas: Equipment Care & Use, Food Production, Food Safety & Sanitation, Personal Characteristics, USDA Meal Program Requirements, and Workplace & Employee Safety. The expert work group reached a consensus to include 15 competencies and 36 knowledge and skill statements within the functional areas.
- Phase III included an electronic review panel who evaluated a CKS draft resource (via email), a face-to-face expert work group who identified content for instructing users on how to best utilize the CKS resource, and an electronic review panel who evaluated a nationwide survey for training needs. The CKS resource developed from this research can be used as a guide for writing job descriptions, conducting interviews, planning training sessions, mentoring SN assistants/technicians, and conducting performance appraisals.

Funding Source: This project was funded at least in part with Federal funds from the U.S. Department of Agriculture, Food and Nutrition Service through an agreement with the Institute of Child Nutrition at the University of Mississippi and the University of Southern Mississippi.
A Comparison of Body Appreciation in Health and Non-Health Related Majors

Author(s): E. Groninger1, J. Bodzio1, K. Eck1, V. Kalecicky2; 1Marywood University, 2Gardens for Memory Care at Easton

Learning Outcome: Upon completion, participants will be able to understand the relationship between body appreciation and college major (health-related major (HRM) and non-health related (NHRM), and completed college credits (CC).

Background: Higher levels of body appreciation (BA; self-awareness and acceptance of the physical body) and education lead to better overall health. Few studies have assessed if health-related courses contribute to BA among college students. This study aimed to compare BA in students with health-related majors (HRM) and non-health related majors (NHRM), and number of completed credits (CC).

Methods: College students (n=102, 22.28±3.97 years, 86.8% female, 95.3% white) completed a survey including the Body Appreciation Scale-2 (BAS-2) and questions regarding college major and number of CC. Participants were grouped into HRM (n=66) and NHRM (n=36), and were compared using an independent t-test. Pearson's correlation assessed the relationship between BAS-2 scores and CC.

Results: The HRM group had significantly (p<0.05) more females and CC than the NHRM group (90.65±49.83, and 61.63±55.89 respectively). No significant differences in age, race, or minor of study was observed between the groups. College students' average BAS-2 score was 3.40±0.89 (possible range 0-5); higher score indicating greater BA). BAS-2 scores did not differ significantly between HRM (3.34±0.79) and NHRM (3.46±1.02) groups. No significant correlations were found between average BAS-2 scores and CC in the total sample or in the HRM or NHRM groups.

Conclusion: BAS-2 scores did not differ between HRM and NHRM groups; nor were scores correlated with CC or any other demographic characteristic. Because greater BA leads to better health outcomes, it is important to investigate what factors are correlated with BA.

Funding source: None

A Nutrition Labeling Online Course (NLOC) Evaluation: Assessing Users’ Feedback

Author(s): M. Cooper, N. Mehta, E. Chen; Health Canada

Learning Outcome: Upon completion, participants will be able to explain the importance of evaluating nutrition training courses to ensure that the information is relevant to the target audience.

Background: In 2016, the Canadian Food and Drug Regulations were amended to include nutrition labeling improvements to the Nutrition Facts table and the list of ingredients. To inform health professionals and educators of the latest information, Health Canada launched a self-paced NLOC. The research goal was to conduct a course evaluation to obtain feedback for improvements and to provide insights for future online courses.

Methods: After taking the course, learners were encouraged to complete an online feedback survey and participate in interviews or discussion groups. The questionnaire focused on users' experience with the course while the interviews and discussion groups focused on the application and use of the course material. Data were analyzed using descriptive statistics and thematic analysis.

Results: In 2021-2022, over 1100 learners registered for the course (students, health professionals, government employees, industry members, educators, members of the public) with 502 (46%) completing the online feedback questionnaire. Questionnaire findings showed that 97% of participants were satisfied with the course and 92% felt it was relevant to their job and professional development. Thematic analysis from four discussion groups and eight interviews showed that quizzes, module summaries, images, interactive elements, and activity resources within the course were especially useful in facilitating understanding.

Conclusions/Relevance: Findings from this study will help inform structure and content improvements to the NLOC and the development of future online courses. This research demonstrates the importance of conducting a course evaluation to ensure that the information provided is usable, relevant and accessible to the target audience.

Funding source: Health Canada

A Content Analysis of Fruits and Vegetable Videos on YouTube and TikTok

Author(s): S. Nakshbandi, C. Coccia; Florida International University

Learning Outcome: Upon completion, learners will be able to determine the popularity and reach of YouTube and TikTok for posting fruit and vegetables related videos.

Objective: Social media platforms can serve as an effective nutrition education tool. Studies suggest that social media content can impact viewers' nutritional decisions; thus, it's critical to verify the popularity of the fruits and vegetable information being shared on various social media platforms. Content popularity of YouTube and TikTok videos relevant to fruit and vegetable information has yet to be assessed.

Purpose: To evaluate the popularity of fruits and vegetable videos available on YouTube and TikTok social media platforms.

Design: Cross-sectional content analysis.

Methods: A TikTok and YouTube content search was conducted using search terms related to fruits and vegetable intake. A total of 25 videos for each platform were included. The popularity of videos was determined based on the number of views and likes.

Results: Average video length on TikTok was 47 seconds and 8:36 minutes on YouTube. Despite differences in video length, there were no significant differences found for views with 1,507,280 views on TikTok and 752,767 on YouTube (t=−1.12, p =.26). Although not significantly different, there were more average likes on TikTok 302,073 compared to10,824 on YouTube (t=−1.70, p =.09). Content of the videos on both platforms included recipes, eating tips, nutrition knowledge, and prepping and storage tips.

Conclusions: Fruit and vegetable intake videos on both platforms are popular. RDNs should consider novel social media platforms to distribute their nutrition information to reach larger population masses.

Funding source: None

A Targeted Needs Assessment for Provision of Preceptor Education on ACEND Enhanced Competencies

Author(s): C. Fose, K. Dickinson; University of Arkansas for Medical Sciences

Learning Outcome: Describe the reported self-efficacy of preceptors in Arkansas with regard to the enhanced competencies and strategize ways in which local education could be improved as part of faculty development initiatives.

Background: The Accreditation Council for Education in Nutrition and Dietetics (ACEND) published revised Accreditation Standards in 2021, including new enhanced competencies developed to ensure students display necessary skills for an entry-level practitioner upon graduation. Our aim was to evaluate perceived self-efficacy of preceptors working in acute care facilities to teach CRDNs 3.1, 3.3, and 3.5.

Methods: All licensed RDNs in Arkansas (955) were approached to complete an electronic survey. Inclusion criteria for analysis were 1.) credentialed RD/RDN, 2.) working in acute care facilities to teach CRDNs 3.1, 3.3, and 3.5. Respondents rated interest level for future training opportunities.

Results: 140 RDNs responded (15% response rate) and 27 met inclusion criteria. The majority (70%) worked in Central Arkansas and had been precepting for >10 years (44%). Results are reported as self-efficacy score/interest for future training.

Conclusions: CRDNs 3.1, 3.3, and 3.5. Respondents rated experience with the course and 92% felt it was relevant to their job and professional development. Thematic analysis from four discussion groups and eight interviews showed that quizzes, module summaries, images, interactive elements, and activity resources within the course were especially useful in facilitating understanding.

Funding source: None
Adding Walnuts to the Regular Diet Improved the Diet Quality Among U.S. Adults: Results of an NHANES Modeling Study

**Author(s):** L. Spence, B. Henschel, R. Li, C. Tekwe, K. Thiagarajan; Indiana University

**Learning Outcome:** Upon completion, participant will be able to learn the impact of adding walnuts to the usual diet.

**Background:** A poor unbalanced diet is a risk factor for many chronic conditions.

**Objective:** To assess the impact of adding one ounce of walnuts on nutrients of public health concern and diet quality.

**Methods:** Food modeling was implemented in the 2015–2018 National Health and Examination Survey (NHANES) in a population of 9,145 adults, aged ≥19 years of non-consumers. One ounce of walnuts was added to the usual dietary intake in this modeling study. The diet quality was measured using Healthy Eating Index (HEI). The nutrient intake was assessed using the National Cancer Institute method (NCI) and the HEI-2015 score was estimated using the population ratio method. Significant differences were determined using non-overlapping 95% CIs.

**Results:** Modeled diet (59.2±0.7) had significantly higher HEI-2015 scores than usual diets (52.4±0.7) out of 100 total points. Compared to usual diet, modeled diet significantly improved the prevalence of inadequacy for magnesium (69.6% to 52.0%), folate (49.2% to 40.6%), Copper (19% to 0.1%), and Zn (34.2% to 24.4%). The mean potassium intake significantly improved from 2443±27 to 2567±27 mg. Further, mean fiber intake significantly increased from 14.6±0.2 to 16.5±0.2 grams. For omega-3 fatty acids, the prevalence of adequate intakes ranged from 51.9% to 68.6%. However, adding one ounce of walnuts completely resolved the inadequacy of omega-3 fatty acid intake.

**Conclusion:** Public health messages targeted at no-nut consumers should emphasize the benefits of nut consumption, specifically walnuts to improve diet quality. Further, adding walnuts to the diet improved the intake of folate, magnesium, and trace minerals.

**Funding source:** This study was funded by the California Walnut Commission.

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Costs and Barriers Associated with the Recruitment of Children for a Dietary Supplement Intervention during Covid-19

**Author(s):** J. Leone, P. Clayton, A. Macchi, R. Galvan, D. Ramirez, J. Romero, V. Dinou, M. Trik-Fellermeier, C. Palacios; Florida International University

**Learning Outcome:** To understand the cost effectiveness of various community-based and online recruitment methods for children and their families into a dietary supplement intervention and the barriers to participation during Covid-19.

**Objective:** To assess the impact of adding one ounce of walnuts on nutrients of public health concern and diet quality.

**Methods:** Food modeling was implemented in the 2015–2018 National Health and Examination Survey (NHANES) in a population of 9,145 adults, aged ≥19 years of non-consumers. One ounce of walnuts was added to the usual dietary intake in this modeling study. The diet quality was measured using Healthy Eating Index (HEI). The nutrient intake was assessed using the National Cancer Institute method (NCI) and the HEI-2015 score was estimated using the population ratio method. Significant differences were determined using non-overlapping 95% CIs.

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**Funding source:** This study was funded by the California Walnut Commission.

Author(s): E. Sylvester1, M. Hoefl2, I. Boyd Willkerson3; 2NurtureTalk (Mother of Fact app), 3Boston University

Learning Outcome: Describe the effect of a two-way texting and video blog program with Registered Dietitian/Lactation Consultant on self-efficacy towards timely and best early feeding practices among new mothers during COVID.

Background: Low maternal confidence in infant feeding knowledge is linked to poor breastfeeding and complementary feeding outcomes. This study assessed the effects of unlimited two-way texting and biweekly video blog education on maternal efficacy of breastfeeding practices and solid food introduction according to the 2020-25 Dietary Guidelines.

Methods: Surveys were collected from 19 mom/baby dyads both prenatally (before intervention) and 7-months (after intervention). Intervention impact was analyzed using Likert scale means, and Wilcoxon signed rank tests based on the Breastfeeding Self-Efficacy Scale Short Form (BSES-SF) and a solid food-efficacy questionnaire (SFEQ). Secondary outcomes included breastfeeding rates through 6 months. Higher scores on both indicate better self-efficacy.

Results: Improvements were seen as measured by the mean pre- and post-mean scores BSES-SF and the SFEQ from pre- to post-intervention. The pre- and post-mean scores for the BSES-SF were 34.4 (13.1) and 47.6 (15.1) (p < 0.001) and the SFEQ means were 31.3 (9.4) and 40.0 (8.5) (p < 0.001). The greatest breastfeeding-related improvement was seen in ensuring the baby was properly latched. The greatest improvement related to solid food introduction was seen in knowing the baby is ready to begin solids. At 6-8 months, 41.2% of moms reported exclusive breastfeeding (national average – 24.9%).

Conclusion: Maternal self-efficacy was improved using unlimited and on-demand messaging for both breastfeeding and solid food introduction. These findings can highlight the potential role of similar services to improve maternal self-efficacy in early feeding practices to improve healthy feeding outcomes such as exclusive breastfeeding through timely introduction of solid foods.

Funding source: Study funding was awarded by the Academy of Nutrition and Dietetics Foundation’s Ann A. Hertzler Memorial Research Grant.

Factors Associated with Registered Dietitians’ Confidence in Their Ability to Provide Lactation Counseling, Guidance, and Recommendations

Author(s): L. Dinour, M. Shefchik; Montclair State University

Learning Outcome: Upon completion, participants will be able to describe factors associated with Registered Dietitians’ (RD) confidence in their ability to provide lactation counseling, guidance, and recommendations if asked by the population they serve.

Background: Healthcare providers’ breastfeeding support positively influences their patients’ breastfeeding behaviors. However, some providers hesitate to offer support due to low self-efficacy. The purpose of this study is to identify factors associated with Registered Dietitians’ (RD) confidence in their ability to provide lactation counseling, guidance, and recommendations if asked by the population they serve.

Methods: Between May-July 2019, a convenience sample of 53 RDs was recruited through social media and e-mail and asked to complete a 15-minute online survey. Frequencies were calculated for descriptive analysis, and Spearman’s correlations were used to assess the association between RD’s age, highest degree earned, breastfeeding knowledge and beliefs indices, number of breastfeeding training methods received, and personal breastfeeding experience with the RD’s confidence in providing lactation support. Significant factors were entered into a linear regression model to determine their relative predictive influence.

Results: The sample was predominantly female (98%), White (98%), non-Hispanic (100%), married (83%), graduate degree earners (70%), and parent (68%), with an average age of 41.3 years. RD age (p = 0.438, p > .001), knowledge index (p = 0.452, p > .001), and personal breastfeeding experience (p = 0.286, p > .04) were significantly associated with RD confidence in providing lactation support. When these factors were entered in the regression model (R² = 0.35, F(3, 47) = 8.289, p < .001), only increasing knowledge index and age remained significant, with knowledge index being the strongest predictor of RD confidence.

Conclusion: To increase RD confidence in providing lactation counseling, guidance, and recommendations, didactic programs and dietetic internships should consider including more breastfeeding education and practical experience into curricula.

Funding source: None

Evaluation of Participant and Health Coach Perceptions of Motivational Counseling Fidelity in the Move & Eat 2 Live Program

Author(s): C. Lawrick1, J. Reese-Smith2, J. Lemacks1, T. Greer1, S. Arai1, M. Madison1, J. Gipson3, M. Johnson1, B. Buck1; 1The University of Southern Mississippi, 2Houston Fire Department, 3My Brother’s Keeper, Inc

Learning Outcome: To describe two outcomes of the concordance of participant and health coach perceptions of motivational counseling in the Move & Eat 2 Live program.

Background: Motivational counseling, a client-centered adaptation of motivational interviewing (MI), promotes dietary behavior change by resolving client ambivalence. Monitoring counseling behavior tends to increase the likelihood of nutrition behavior change. The aim of this study is to evaluate the concordance of participant and health coach (HC) perceptions of the rational and technical components of MI in the Move & Eat 2 Live (ME2L) program.

Methods: ME2L is an intensive weight management program that promotes nutrition and physical activity among Mississippians via motivational counseling facilitated sessions. Participants and HCs completed the Client Evaluation of MI (CEMI) to capture perceptions of HC intervention delivery. Participants and HC CEMI means/standard deviation (SD) were calculated for three sessions (T1-T3). IBM SPSS for Windows, version 25 was used to analyze CEMI results.

Results: HC CEMI Mean(SD) were 3.90(0.41), 4.07(0.37), and 4.08(0.41) for T1-3, respectively. Participant CEMI Mean(SD) were 4.53(0.41), 4.51(0.59), and 4.50(0.54) for T1-3, respectively. T-test analyses for HC and participants’ CEMI rating concordance were significant for T1-T3: T1 (t(211) = -6.02, p < .001, 95% CI [-0.91, -0.44]); T2 (t(188) = -3.72, p = .002, 95% CI [-0.88, -0.24]); T3 (t(18) = -3.23, p = .005, 95% CI [-0.75, -0.16]).

Conclusion: HC CEMI ratings were lower compared to Participant CEMI ratings across each time point. HC CEMI ratings increased from T1 to T3, while Participant CEMI ratings remained relatively consistent. Further research should consider whether participants’ positive ratings of MI-based intervention delivery translates to positive behavior change and health outcomes.

Funding source: This work was supported by the Mississippi INBRE, funded by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant # P20GM103476.

Food Preparation and Cooking Skills of First-Year College Students at a Mid-Size University: I Know, I Can, I Do

Author: J. Vogelzang; Grand Valley State University

Learning Outcome: Apply study findings to help conceptualize nutrition resources needed by first-year college students.

Background: Food literate individuals are more likely to practice behaviors that mitigate chronic diseases and are less likely to eat impulsively, instead choosing healthier food items. The degree of pre-existing food literacy is dependent on multiple factors, including the amount of cooking done by family, personal interest in food preparation, food security, and work experience in the food industry. With increased flexibility in meal plans and off-campus living, this research examined cooking skills in first-year students.

Methods: The validated survey tool consisted of seven demographic questions and 21 questions relating to cooking and food preparation skills separated into three main categories: I know..., I can..., I do... The Qualtrix survey was emailed from the university to all first-year students.

Results: Completed surveys (n= 463) were returned by about 10% of the first-year students (N = 4,214). A 2-sample unpooled t-test was used for the gender comparison. Women scored significantly higher than men in total and for all question types except consumer awareness ("I know") where there was no significant difference between genders. Students with prior food service work experience scored higher in skills however the time worked in food service did not increase skill level. The lowest confidence scores were in food safety, planning meals ahead, and cooking with a limited number of ingredients.

Conclusion: Students showed varying levels of food literacy with scores dependent on race, gender, and food-related employment. University-provided cooking resources for those first-year students without meal plans could level the playing field and increase food literacy.

Funding source: None
Poster Session: Business, Industry and Product Development and Marketing: Education and Counseling; Foodservice Systems Management; Informatics; Organization Management; Quality Management; Research and Scholarship

Good Perceived Understanding of and Satisfaction with Competency-Based Education: The 2021 Survey of Faculty and Preceptors in the Future Education Model Graduate Demonstration Programs

Author(s): L. Wang¹, J. Wright¹, J. Swain¹, E. Cowie¹, R. AbuSabha²; ¹University of the Pacific, ²Marywood University, ³Case Western Reserve University, ⁴Accreditation Council for Education in Nutrition and Dietics

Learning Outcome: Upon completion, participant will be able to articulate perceived understanding of and satisfaction with competency-based education and demonstration programs among faculty and preceptors.

Graduate programs that have adopted the Future Education Model (FEM) Accreditation Standards use competency-based education (CBE) that integrates course work and experiential learning to prepare students to become registered dietitian/nutritionists. Twenty-seven newly accredited graduate demonstration programs of the FEM Accreditation Standards (FG programs) were surveyed in Fall 2021. Of the 24 respondents, half were preceptors (12/24, 50.0%) and 10 were faculty (41.7%). More than half of respondents received training on CBE in the last year (14/24, 58.3%). Live webinars, online modules, in-person workshops, and hard-copy handouts were the most frequently used formats of training. On a Likert scale of 1-7 (1 = lowest and 7 = highest), the average reported understanding of CBE was 5.85 (SD = 0.56, 100% rating 5 or higher; n = 13) and with the training on CBE was 5.85 (SD = 0.689, 100% rating 5 or higher; n = 13). Within their FG programs, the average satisfaction with integrated experiential learning was 5.41 (SD = 1.333, 68.2% rating 5 or higher; n = 22), with CBE assessment was 5.09 (SD = 1.411, 68.2% rating 5 or higher; n = 22), and with student demonstrating competencies was 5.50 (SD = 1.300, 81.8% rating 5 or higher). Consistent with data from previous surveys, the results indicate good perceived understanding of CBE by faculty and preceptors and overall satisfaction with CBE training as well as their respective FG programs.

Funding source: This study was sponsored by the Accreditation Council for Education in Nutrition and Dietics (ACEND).

Impact of Nutrition Education with and Without Diet Coaching on Dietary Protein Intakes Of Caregivers Their Family Members With Dementia

Author(s): S. Gropper¹, D. D’Avolio¹, M. Appelbaum¹, D. Newman¹; ¹Florida Atlantic University, ²Florida State University

Learning Outcome: Describe the impact of nutrition education with and without diet coaching on the protein intakes of caregivers and their family members with dementia.

Many adults do not consume enough protein. Inadequate dietary protein decreases muscle protein synthesis, muscle mass, strength, and function. This study examined the impact of nutrition education with and without diet coaching on protein intake among persons caring for family members with dementia (FMWD). (Institutional study approval #148931-2). It was hypothesized that coached caregivers (CG) and their FMWD would increase protein intake to a greater extent than those not coached. Participants were recruited from state memory/wellness centers. Twenty-five CG (92% females, mean age 66.7 yr) and their FMWD (mean age 81yr) completed the 8-week study. All participants received nutrition education including a protein prescription. Coached-group randomized CG also received weekly diet coaching. Anthropometrics and protein intake (from three 24-hour diet recalls) were assessed at baseline and 8 weeks. A factorial repeated-measures ANOVA examined within group and between effects. There were no significant differences between coached (n = 15) and not-coached (n = 12) CG and FMWD for baseline parameters. After 8-weeks, coached and not-coached CG’s protein intake (g/kg and shown g/day) significantly increased from 62.6±13.2g at baseline to 82.8±12.4g coached and from 60.0±6.4g to 67.1±19.1g not-coached with a significant (p<0.014) intervention effect. Between baseline and 8-weeks, FMWD’s protein intake (g/kg and shown g/day) increased (p=0.008) from 51.2±15.4g to 79.5±22.7g coached and from 60.0±15.4g to 70.2±23.7g not-coached but with no intervention effect. Coached CG exhibited an improved protein intake of 32% whereas the not-coached CG protein intake only improved by 12%. The coaching intervention did not result in differences in protein intake among FMWD.

Funding source: Institute of Coaching, McLean Hospital/Harvard Medical School Affiliate. Boston, MA.

Frequency of Performance of Advanced Practice Tasks Among Alumni from the Rutgers School of Health Professions Department of Clinical and Preventive Nutrition Sciences Graduate Programs

Author(s): R. Torres-Cruz¹, C. Gassmann², J. Sackey¹, R. Touger-Decker¹, R. Brody¹; ¹Rutgers School of Health Professions, ²Rutgers Biomedical and Health Sciences

Learning Outcome: Upon completion, participants will be able to describe the frequency of performance of the Commission on Dietetic Registration advanced practice tasks of clinical nutrition graduate programs’ alumni.

Frequency of performance of AP tasks is valuable for evaluating program outcomes. This study explored the frequency of performance of the Commission on Dietetic Registration (CDR) AP tasks among alumni from the entry-level (ELMSCN) and post-professional Master of Science in Nutrition and Dietetics (MSCN) programs and the Doctor of Clinical Nutrition (DCN).

Methods: This cross-sectional study used a web-based survey sent in the summer of 2021 and contained sociodemographic and professional characteristics questions and the 63 CDR AP tasks. Fisher’s exact tests were used to explore the differences in frequency of performance of three research-related AP tasks by graduate program.

Results: Of the 94 alumni who responded (response rate – 32.5%), 90.9% were female, non-Hispanic (88.6%), and white (89.8%), with a median age of 44.5 years and 17 years of Registered Dietitian Nutritionist experience; 73.4% (n=69) were in clinical practice. All alumni performed clinical AP tasks more frequently than management, design/development, and research tasks. ELMSCN alumni performed the tasks “evaluating published research” (P<0.005) and “utilizing systematic methods to obtain answers” (P=0.001) more frequently on a daily basis than MSCN and DCN alumni. In contrast, DCN alumni performed these tasks more frequently monthly than MSCN and ELMSCN alumni.

Conclusion: Entry-level program alumni performed research-related tasks more frequently on a daily basis compared to MSCN and DCN alumni. More research is needed to understand the factors that impact the research task performance.

Funding source: Rutgers School of Health Professions, Department of Clinical and Preventive Nutrition Sciences

Food/Food Service Satisfaction of Residents Living in a Rehabilitation and Nursing Center

Author(s): A. Balestino¹, J. Bodzió³, A. Levine¹, N. Tagge²; ¹Marywood University, ²Culinary Services Group

Learning Outcome: Upon completion, participants will be able to describe the food/food service satisfaction of residents living in long-term care as well as its relationship to age and length of stay.

Background: Dissatisfaction with food/food service (f/fs) in long-term care can lead to malnutrition, morbidity, mortality, and increased healthcare costs. The purpose of this study was to investigate f/fs satisfaction of residents in a rehabilitation and nursing facility.

Methods: Cognitively intact residents at a rehabilitation and nursing center (n=26, 84.7%±11.9 years, 65.4% female, 100% white) answered 28 questions from the (1) enjoying f/fs, (2) exercising choice, (3) cooking good food, and (4) providing food service domains of the FoodEx-LTC survey along with questions about demographics and length of stay. Domain scores were calculated and residents were grouped by age and length of stay. Pearson correlation and independent-sample t tests were used to determine relationships between f/fs satisfaction, demographics, and length of stay. Significance was set at p<0.005.

Results: Mean scores for domains 1–4 respectively were 24.88±4.07 (range 17-31), 16.12±2.70 (range 11-21), 16.38±3.77 (range 6-20), and 29.48±4.74 (range 16-36). Older residents were more satisfied with the cooking good food domain than younger residents (p=0.015). Residents who stayed at the facility long-term trended toward higher satisfaction scores (17.77±2.421) for the cooking good food domain than short-term residents (15.27±3.82, p=0.065). No other notable relationships were found.

Conclusion: Residents’ satisfaction with their food/food service was above average. Age was positively associated with higher food/food service satisfaction scores. Because higher food/food service satisfaction can lead to improved nutritional status and decreased risk of nutrition-related complications, further investigation into other factors that influence food/food service satisfaction in the long-term care setting is warranted.

Funding source: None
Implementation of a Culinary Medicine Curriculum to Increase Confidence and Competency Among Preclinical Medical Students

Author(s): S. Figueroa, S. Joshee, A. Wybreycht, M. Yco, V. DiMassa, E. Kelley, E. Nguyen, K. Bain, K. Eckert; University of Nevada, Reno School of Medicine

Learning Outcome: Upon completion, participants will demonstrate increased confidence and competency when addressing nutrition interventions and referrals.

Background: A lack of adequate nutrition training in medical education has led to limited confidence and competency among providers when addressing nutrition interventions and referrals. One study showed that medical students felt their nutritional education was inadequate due to lack of prioritization of nutrition education, faculty to provide that education and insufficient application of nutrition sciences in clinical settings. There is a clear need to incorporate a more robust nutrition curriculum in medical education.

Methods: Pre-clinical students will participate in student-led interactive modules, modified from the Health Meets Food curriculum which is reviewed and updated by registered dietitians, physicians and culinary experts. Program and post-surveys will be conducted to assess participant’s knowledge, comfortability, and confidence in nutritional counseling. Students were surveyed on Qualtrics® (Qualtrics, Provo, UT) with a 5-point Likert scale and results were compiled using Microsoft Excel®.

Results: Initial Likert surveys taken by preclinical students show that most students felt knowledgeable about what a healthy diet entails (μ = 4.24, n = 138). However, lower scores were seen in statements regarding students’ comfort level in counseling patients about nutrition (μ = 3.36, n = 138), cooking and eating habits (μ = 3.36, n = 138), and prescribing nutritional interventions for disease management (μ = 3.30, n = 138).

Conclusions: Upon completion of the culinary medicine curriculum, we anticipate seeing an increase in confidence and competency among participants. Implementing this curriculum will empower future providers with the tools to make holistic disease management recommendations and initiate proactive referrals for their future patients.

Funding source: None

In Vitro Evaluation of The Capacity to Degrade Histamine of DAO From Pig Kidney Combined with Vitamin C

Author(s): P. Gálvez-Martín1, E. Gallego2, L. Soriano-Romani2, D. Martínez-Puig3, J. Velasco4; 1Bioiberica S.A.U., 2AIAIN

Learning Outcome: Know and evaluate new alternatives for an optimized dietary management of histamine intolerance.

Background: Histamine is detoxified by intestinal diamine oxidase (DAO). A deficit of DAO activity can result in histamine intolerance, a clinical condition characterized by allergic-like symptoms. Histamine intolerance can be treated with exogenous DAO supplementation. The aim of the present study was to evaluate the histamine degrading capacity of a DAO extract from pig kidney combined with vitamin C.

Methods: Kinetic characterization of DAO extract (DAOgest) from Bioiberica S.A.U., Spain was determined using histamine as a substrate. Histamine concentrations ranging from 0.01mM to 5mM were incubated with DAO extract. Histamine reduction was determined by HPLC-PDA using an in vitro system (sodium phosphate buffer, 20 mM; pH 8.0) in which DAO extract was incubated at 37°C for 5 h with histamine at a concentration ranging from 10 to 150 mg/L. In a subsequent experiment vitamin C was added to the medium using 10 and 20mg/L of histamine.

Results: Enzyme activity of the DAO extract increased with increasing histamine concentrations until 0.63mM showing substrate inhibition. Using 4.2mg of DAO extract, higher histamine reductions were obtained with the lower histamine concentrations (16% at 20 mg/L; 30% at 10 mg/L). The addition of 10 mg of vitamin C to the media increased the reduction of histamine at 37°C to 77% at 20 mg/L and 73% at 10 mg/L.

Conclusion: The supplementation of DAO extract with vitamin C increases the enzymatic activity of DAO. These results suggest that dietary supplementation with DAO from pig kidney and vitamin C might help in reducing symptoms associated with histamine intolerance.

Funding source: This study was supported by Bioiberica S.A.U., Barcelona, Spain.

Nutrition Intervention to Reduce Body Weight and Systemic Inflammation among World Trade Center Center Responders with PTSD: Pilot Randomized Controlled Trial

Author(s): A. Reichardt1, K. Hughes1, W. Hou1, X. Yang2, S. Clouston1, B. Luft1, C. Arcan1; 1Stony Brook Medicine, 2School of Medicine, Stony Brook University, 3Stony Brook University, 4Richmond University

Learning Outcome: Upon completion, participants will be able to improve confidence in educating others with PTSD about the Mediterranean Diet (MedDiet), integrative anti-inflammatory practices, and list three positive patient outcomes.

Background: Responders of the 9/11 World Trade Center (WTC) disaster suffer from increased chronic conditions like PTSD, metabolic syndrome (MetS) and systemic inflammation. The MedDiet has been shown to lower systemic inflammation and MetS risk. Nutrition intervention studies have not been conducted among WTC responders.

Methods: Pilot randomized-controlled trial, among overweight/obese WTC responders (45-65 y/o). Participants (N=62) were recruited from the Stony Brook WTC-Health & Wellness Program and randomly assigned to intervention (MedDiet, n=31) or control (usual counseling n=31). Baseline, post-intervention (n=93% retention), and 3-month follow-up (73% retention) data (blood, anthropometrics, electronic surveys, PTSD symptoms, and MedDiet scores) were collected. The intervention included 10 high-dose weekly sessions of online nutrition materials, motivational text messages, goal setting questions, cooking lessons; and three individual counseling sessions. Nutrition counseling targeted nutrition-related personal, behavioral, and environmental factors to improve weight and systemic inflammation.

Results: Both groups experienced significant increase in median MedDiet score (p < 0.0001) and decrease in oxLDL at post- and 3-month follow-up (FU). Intervention had improvement in waist circumference (WC) at post- and 3-month FU (p < 0.0001); improvement in MetS at post- (p <0.0126) and 3-month FU (p <0.0522) and a clinically significant decrease in PCL score for both groups at post- and FU measurements (p < 0.0001).

Conclusion: This pilot RCT resulted in significant improvements in both groups since they both received nutrition counseling; however, the intervention group experienced additional benefits in WC, in certain metabolic biomarkers and symptoms of PTSD. The findings of this trial may inform the design of future larger scale interventions.

Funding source: Funding Source: CDC/NIOSH U01OH012057 www.clinicaltrials.gov: NCT05138198

Optimal, Low-Calorie Defaults in Combo Meals Do Not Affect Consumers’ Fast-Food Restaurant Visit Intentions, Regardless of Their Health Concern Level

Author(s): M. Diaz-Beltran1, K. Byrd2; 1Pontificia Universidad Javeriana, 2Purdue University

Learning Outcome: Participants will identify how consumers’ health concern level influences the effects of optimal, low-calorie defaults in combo meals on restaurant visit intention.

Background: People with different health concern levels may react distinctly to health-related strategies. Effects of optimal, low-calorie defaults in combo meals on fast-food restaurant visit intention among consumers with varying health concern levels were evaluated.

Methodology: The study was a between-subjects randomized scenario-based experiment. US adults (n=377) were recruited through an online crowdsourcing platform. A fast-food drive-thru simulation was embedded in a survey. Participants saw one of three options of menu boards 1) menu items available for customers to create a combo meal; 2) combos that included traditional high-calorie sides and beverages per default; or 3) combos that included low-calorie optimal sides and beverages per default. Next, respondents ordered a combo and followed similar purchasing procedures. Finally, respondents answered questions using 7-point Likert scales about restaurant visit intention and health concern.

Findings: Results from Quade’s non-parametric analysis of covariance showed no differences in visit intention due to health concern levels among the three experimental conditions. This finding suggests that combos with optimal, low-calorie defaults could be added to menus, and even people with low health concern levels would visit the establishment in the same fashion. Potentially, that circumstance may increase familiarity with healthy offerings and improve long-term food decisions without negatively impacting the restaurant industry.

Conclusions: Offering optimal, low-calorie defaults in combo meals does not alter the restaurant’s visit intention of people with different levels of health concern. Dietetic professionals in the restaurant industry may use findings from this study to justify the use of optimal, low-calorie defaults.

Funding source: This work was supported by the Arthur Avery Foodservice Research Laboratory at Purdue University and the Faculty Development Program at Pontificia Universidad Javeriana.

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Predictive Factors for NICU Dietitian Salaries in the US

Author(s): S. Merlino Barr1, R. Hand2, T. Fenton1, S. Groh-Wargo3; 1MetroHealth Medical Center, 2Case Western Reserve University, 3University of Calgary

Learning Outcome: Identify a factor that increases US NICU RDN salary.

Background: NICU RDNs provide nutrition support to critically ill infants. In the 2021 Compensation and Benefits Survey of the Dietetics Profession (C&B), pediatric RDNs reported earning less than all surveyed RDNs. We evaluated influential individual and institutional factors on NICU RDN salaries.

Methods: We conducted an anonymous, online survey of NICU RDNs in fall 2021. We collected individual RDN salary (standardized to an hourly rate), education, experience, NICU size and level and used bivariate regression to assess their relationships.

Results: Respondents were from 153 hospitals in 43 US states. The 186 NICU RDNs had a median 13 years of experience. Average hourly compensation was $34.39 (SD: $7.44). 61% of respondents had at least a master’s degree and 58% held at least one specialty certification, with the most common being CNS (n=47) and CSP (n=32).

Length of RDN career had a statistically detectable positive effect on annual salary (p < 0.05, Pearson R = 0.49). The total NICU beds per RDN FTE (P-value = 0.08, Pearson R = -0.15) and holding a specialty certification (P-value = 0.05, Point Biserial Correlation = 0.14) approached but did not reach statistical significance.

Conclusions: NICU RDNs routinely have specialized training and education but are not compensated better than the conglomerate of RDNs described by the C&B. Methods to improve NICU RDN salaries are not addressed by the C&B. Further research is needed into specific factors that contribute to the TS experience. Data was statistically analyzed.

Funding source: None

Quantifying Body Image Through Smartphone-based Artificial Intelligence: A New Methodological Approach

Author(s): R. Braun-Trocchio1, C. Brandner2, J. Willis1, A. Graybeal2; 1Texas Christian University, 2University of Southern Mississippi

Learning Outcome: Upon completion, participants will be able to demonstrate the degree to which artificial intelligence can assess body image concerns which may have utility in practice.

Concerns about body image (BI) may lead to disordered eating; however, accurately quantifying BI remains an obstacle. New devices use smartphone-based artificial intelligence (AI) to assess body composition and can automate one's appearance when provided with an objective body fat percent (BF%). Automating body composition through AI may better capture current BI issues, but this method has not been evaluated. Ninety-eight participants (n=35, F=63) underwent body composition scans using the HALO App and DXA. Using the HALO automated BF% visual analog scale (VAS), participants selected an image for each of the following: 1) their perceived body; 2) their ideal body, and 3) what a partner would find attractive. Additionally, participants completed the BI State Scale (BSS) and Multidimensional Body Self-Relations Questionnaire—Appearance Scale (MBSRQ-AS). DXA and HALO BF% were significantly positively associated (r = 0.95, p < 0.001). HALO VAS showed differences for measures of actual, perceived, ideal, and partner BF% (p < 0.05) and no mean difference (MD) from actual by sex. After adjusting for measures of adiposity, males had a greater PERCEIVEDMD (p < 0.035) and PARTNERMD (p = 0.028), IDEALMD (p < 0.001) and PARTNERMD (p < 0.001), but not PERCEIVEDMD (p = 0.827) differed by BMI classification. IDEALMD was greater for individuals with overweight and obesity compared to normal (p < 0.001, p < 0.001) and underweight (p < 0.001). MD for all BF% questions were not associated with MBSRQ-AS (p < 0.05), BSS was associated with IDEALMD (r = 0.41, p < 0.001) and PARTNERMD (r = 0.24, p < 0.019). BI concerns can be accurately assessed using automated BF% VAS and may allow dietitians and behavioral therapists to quickly quantify these issues.

Funding source: None

Preliminary Study to Assess Allied Health Students' Engagement in Nutrition Counseling Using Telehealth Simulation

Author(s): K. Osborne, J. Kandiah, J. Jones; Ball State University

Learning Outcome: Recognize the advantage of using telehealth simulation of a standardized diabetic client (SDC) to improve undergraduate allied health students' (UAHS) engagement in nutrition counseling.

Background: Information about the effectiveness of simulation-based learning in undergraduate allied health students (UAHS), especially dietetics, is limited.

Objective: Assess UAHS engagement in a nutrition counseling telehealth simulation (TS) with a simulated diabetic client (SDC).

Methods: After IRB approval, UAHS (N = 20; 17 dietetics, 2 exercise science and 1 health education) in the first dietetic clinical course received in-depth instruction on diabetes mellitus. Prior to the individualized TS, UAHS received simulation objectives and information (e.g., diet, medications) on the SDC. Upon completion of the TS, UAHS engagement was assessed on three subscales 1 value of the TS; ii) efforts placed in TS, and iii) the instructor's contribution to the TS experience. Data was statistically analyzed.

Results: Internal consistencies of sub-scales were acceptable, with Cronbach Alpha coefficients of .90, .77, and .74 for value, effort, and instructor, respectively. On a six-point, Likert-type scale, the means were 4.55, 5.07, and 5.08 respectively, indicating the students valued the simulation, placed tremendous effort on TS, and felt positively towards the professor’s instruction. There were potential gender differences in effort (t(16) = 3.05, p = .008) with males reporting less effort than females. Racial/ethnic differences in the rating of the instructor were also found (Mann-Whitney U = 6.00, n1 = 17, n2 = 3, p = .04), with Caucasian students giving more positive ratings.

Conclusion: Overall, UAHS had high levels of engagement in the TS suggesting that a well-executed experience improves students’ understanding of diabetes and practicing nutrition counseling increases their future professional competency.

Funding source: None

RDNs Favorably Impact the Dietary Quality of Life of Young Adults with Type 1 Diabetes Mellitus

Author(s): J. Kozlosky1, J. Bodzio1, K. Eck1, C. Boback2; 1Marywood University, 2Geisinger Health System

Learning Outcome: Upon completion, participants will be able to describe how QoL and HbA1c differ by type of nutrition intervention received by young adults with T1DM.

Background: Given the early onset of Type 1 Diabetes Mellitus (T1DM), young adults stand on the precipice of developing complications while struggling to maintain adequate hemoglobin A1c (HbA1c) and quality of life (QoL). This study aimed to investigate HbA1c and diabetic QoL in young adults with T1DM by receipt of nutrition intervention.

Methods: Participants, recruited from T1DM-centric online communities, (n=137, 26.6±5.2 years, 78.8% female, 89.1% white) completed a survey which included the Diabetes Quality of Life Scale (six domains; possible score range 0-100, lower scores indicate better QoL) and HbA1c. Upon completion, participants will be able to describe how QoL and HbA1c differ by type of nutrition intervention received by young adults with T1DM.

Results: Of the total sample, 17.5% received no intervention, 29.9% education, 2.2% general nutrition, 12.7% RDN-provided nutrition counseling, 12.7% RDN-provided nutrition education, 10.2% general nutrition education, 8.7% nutrition experts. Of the total sample, 17.5% received no intervention, 29.9% education, 2.2% general nutrition, 12.7% RDN-provided nutrition counseling, 12.7% RDN-provided nutrition education, 10.2% general nutrition education, 8.7% nutrition experts.

Conclusion: Lower HbA1c is associated with better overall QoL in young adults with T1DM. While general nutrition interventions do not improve HbA1c or QoL, RDN-provided interventions increase dietary QoL. These findings support both future research into factors that may limit the impact of interventions and continued advocacy for RDNs as nutrition experts.

Funding source: None
Self-Reported Motives for Use of Dietary Supplements in an Adult Population

Author(s): S. Mitro1, K. Schoefer2, A. Weeden1, C. Byington1; 1St. Luke’s Health System, 2Sodexo, 3Idaho State University

Learning Outcome: Upon completion, participants will be able to recognize 3 common motives for dietary supplement use.

Background: The use of dietary supplements (DS) has gained popularity in recent decades as a benefit for personalized health and wellness. Current knowledge of DS use exists regarding sociodemographic data and frequencies of use however, a gap exists in why dietary supplements are being used.

Methods: An anonymous online survey was conducted focusing on the uses of collagen, CoQ10, multivitamin multimineral (MVMV), probiotics, vitamin C, vitamin D, vitamin E, and zinc. Participants (n = 121) were recruited through various social media outlets from across the US. Frequency data was used to characterize participants. Logistic regression was used to predict motives for DS use.

Results: Vitamin D, vitamin C, and a MVMV supplement were the most frequently used DS. DS taken for immune enhancement included vitamin C (p < 0.001), vitamin E (p = 0.37), zinc (p = 0.12). MVMV (p < 0.001), vitamin C (p = 0.046), vitamin D (p < 0.001), and zinc (p < 0.001) were used to improve nutritional status. Probiotics (p = 0.005) were used in place of mainstream therapy. Collagen (p = 0.001) was used for anti-aging purposes

Implications: This study reaffirms the use of DS to improve nutrition as well as providing an understanding for other motives of use. Recognizing the reasons for DS use can enhance the knowledge of dietitians and make more confident practitioners when educating clients and other health professionals.

Funding source: None

The 2021 Survey of Program Directors of Graduate Programs Following the Future Education Model Accreditation Standards

Author(s): L. Wang1, J. Wright2, J. Swain3, E. Cowie4, R. AbuSabha; 1University of the Pacific, 2Marywood University, 3Case Western Reserve University, 4Accreditation Council for Education in Nutrition and Dietetics

Learning Outcome: Upon completion, participant will be able to describe the most significant benefit and challenges in developing graduate demonstration program following the Future Education Model Accreditation Standards identified by program directors.

The Future Education Model (FEM) Accreditation Standards uses competency-based education (CBE) that integrates experiential learning with course work to prepare students for the nutrition and dietetics professions. Directors of 27 newly accredited graduate demonstration programs (FG programs) were surveyed in Fall 2021 when most of the programs (23/27, 85.2%) already had students enrolled. Off the total of 244 students, approximately 40% (96/244, 39.3%) did not hold a Didactic Program in Dietetics (DPD) verification statement prior to enrollment, a slight decrease from 2020 (56/130, 43.1%). Consistent with data from previous surveys, FG program directors identified CBE as the most significant benefit for implementing the FEM Standards for reasons including supporting the evolution of dietetic education, streamlining the curriculum, integrated experiential learning, individualization in student training, enhanced critical thinking, and increased student access to the career in dietetics without a DPD verification. Lack of understanding of CBE and of FEM among different stakeholders was identified as the biggest challenge, followed by recruitment and inadequate support of program directors from their institutions. Differences in preparation between DPD and non-DPD students also posed a challenge. The results indicate FG programs’ promise to enhance the preparation of students to become a registered dietitian nutritionist and suggest the need for enhanced training, communication, and publicity on CBE and FEM among different stakeholders.

Funding source: This study was supported by the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

Students from the Future Education Model Graduate Programs Felt Confident and Ready to Practice as Registered Dietitians/Nutritionists: The 2021 Student Exit Survey

Author(s): L. Wang1, J. Wright2, J. Swain3, E. Cowie4, R. AbuSabha; 1University of the Pacific, 2Marywood University, 3Case Western Reserve University, 4Accreditation Council for Education in Nutrition and Dietetics

Learning Outcome: Upon completion, participant will be able to describe perceived understanding of CBE, satisfaction of training on CBE, and confidence in and readiness for practice as dietitians.

Students from graduate programs that have adopted the Future Education Model (FEM) Accreditation Standards receive competency-based education (CBE) that integrates course work and experiential learning to prepare them to become registered dietitian/nutritionists. Students from ten out of thirteen graduate demonstration programs of the FEM Accreditation Standards (FG programs) surveyed in Fall 2021 participated in this study. Of the 100 students, overwhelming majority (87/100, 87%) reported receiving training on CBE. Approximately two-thirds of students (67/100, 67%) received the CBE training from their program directors. In-person training, live webinars, online modules, and hard-copy handouts were frequently used formats of training. On a Likert scale of 1-7 (1 = lowest and 7 = highest), the average understanding of CBE was 6.25 (SD = 0.973, 94.0% rating 5 or higher, n = 83) and satisfaction with CBE training was 6.12 (SD = 1.192, 88.1% rating 5 or higher, n = 84). The readiness for practice as dietitians was 6.12 (SD = 0.959, 91.3% rating 5 or higher, n = 92). The average confidence in their ability to practice was 6.10 (SD = 1.049, 90.2% rating 5 or higher, n = 92). The results indicate high levels of perceived understanding of CBE and satisfaction with training on CBE. Overall, students graduating from the FG program reported high confidence in their ability and readiness for practice as dietitians among students from FG program.

Funding source: This study was sponsored by the Accreditation Council for Education in Nutrition and Dietetics (ACEND)

The Attitudes Toward Interdisciplinary Health Care Teams Scale: Factor Analysis in Registered Dietitians

Author(s): M. Voorhees, H. Wengreen; Utah State University

Learning Outcome: Upon completion, the viewer will be able to identify whether the Attitudes Toward Interdisciplinary Healthcare Teams (ATIHCT) scale is a valid measure of interdisciplinary attitudes in RDNs.

Background: Interdisciplinary teamwork contributes to enhanced healthcare outcomes. The Attitudes Toward Interdisciplinary Healthcare Teams (ATIHCT) scale was developed to assess health care team members’ attitudes toward interdisciplinary teams, but has yet to be validated for use in teams that include Registered Dietitian Nutritionists (RDNs).

Objective: To ascertain the validity of the ATIHCT (13 items, 2-factor scale) in Registered Dietitian Nutritionists (RDNs) preparatory for future analyses of attitudes.

Methods: This online cross-sectional study included 697 RDNs of whom 617 (88.5%) completed ≥50% of the survey. Confirmatory Factor Analysis (CFA) was performed on the ATIHCT using Maximum Likelihood. Model fit was examined with root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). Exploratory Factor Analysis (EFA) with oblique rotation was conducted to determine if an alternative factor structure may be more suitable.

Results: CFA suggested poor model fit for the 2-factor ATIHCT in RDNs (RMSEA=0.17; p < 0.001; CFI=0.61; TLI=0.37). The EFA suggested a 4-factor model, which differed considerably from the ATIHCT model in terms of item arrangement on the factors proposed by the statistical analysis.

Conclusions: More research is needed on the ATIHCT in RDNs considering preliminary EFA findings. Future CFA on the 4-factor model in addition to possible alterations to the measure may be appropriate for this population.

Funding source: None
The Influence of Sustainability Efforts on Sustainable Consumption Habits Amongst College Students

Author(s): R. Bell, C. Anstrom; Olivet Nazarene University

Learning Outcome: Participants will be able to identify the implications of sustainability efforts implemented within a college campus food service on student perception of university sustainability practices and student behavior.

Background: Sustainability of food systems is a growing concern for registered dietitian nutritionists (RDNs), food service operation employees, policymakers, and activists. Limited research studying student awareness of sustainability efforts and the implication towards developing sustainable behaviors is available. This study explores the relationship between student awareness of sustainability efforts implemented within a college campus food service operation and student perception of university sustainability.

Methods: A convenience sample of 102 (73 females, 29 males) undergraduate students attending a small midwestern university completed a questionnaire developed by Belen Derqui (2020). This questionnaire was adapted with permission for this study. The questionnaire included objective questions on student awareness and subjective questions on student perception of university sustainability to study the relationship. Data was analyzed utilizing the Spearman’s rank correlation coefficient.

Results: Statistically significant positive correlations between student awareness of university efforts to record measurements of food waste and student perception of awareness of efforts and resources in reducing food waste were found ($r_s = 0.409, p < .001$). Significant positive correlation was found between student perception of awareness between university efforts and awareness of efforts in reducing food waste and the university’s efforts to minimize their environmental footprint ($r_s = 0.491, p < .001$).

Conclusion: Though the relationships were of moderate strength, the statistically significant positive correlation between student awareness in relation to student perception of awareness serves implications that more frequent exposure to sustainability efforts may lead to increasing conscientiousness with potential for students to develop sustainable practices and behavior.

Funding source: None

The Use of Smartphone-Based Artificial Intelligence to Predict Waist and Hip Circumference: A Physical Circumference Comparison

Author(s): A. Graybeal, C. Brandner, J. Willis; 1University of Southern Mississippi, 2Texas Christian University

Learning Outcome: Upon completion, the participant will be able to describe the validity of smartphone-based artificial intelligence as it relates to quantifying common anthropometrics.

The surge in remote dietary counseling methods requires parallel advancements in remote anthropometry to adequately assess client health. Unfortunately, there are few methods that remotely assess anthropometric measurements without a trained technician present. Smartphone-based applications use artificial intelligence (AI) to automate anthropometric assessments and predict body circumferences. However, this method has not been validated. Waist/hip circumferences (cm) were collected on 78 participants ($m=29, f=49$) using tape measure, the MeThreeSixty App (iOS; Samsung, SS), and the myBVI App. Circumferences via tape measure were used as the criterion and used to assess agreement. Intraclass correlation coefficients showed good reliability for all measures (ICC = 0.96-0.99). Waist (IOSCE: 3.9; SSCE: 3.0) and WHR (IOSCE: 0.06; SSCE: 0.05; myBVI: 0.05) were consistently underestimated while hip measurements were consistently over-estimated (IOSCE: 2.9; SSCE: 3.3). Total error (TE) values were unable to validate measures of waist (TE: 6.6-7.2), hip (TE: 5.2-5.3), and WHR (0.05-0.06). Proportional bias was apparent for all automated waist measurements ($\beta = 0.16-0.18, p = 0.001$) and for hip measurements from SS ($\beta = 0.088, p = 0.035$) revealing an underestimate relative to the criterion at higher average circumferences. There was no proportional bias for WHR. CE was lower in males for waist (Males: 1.58-2.55; Females: 3.88-4.73) and hip (Males: 0.71-1.42; Females: 4.17-4.45). Additionally, TE was lower for males for waist (Males: 6.2-6.4; Females: 6.8-7.6) and hip (Males: 3.3-4.0; Females: 5.9-6.0) concurrent with higher associations (Males, $r = 0.95-0.98$; Females, $r = 0.90-0.91$). Automated smartphone-based waist and hip circumference measures vary widely, display proportional biases, and differ between sex. Thus, this method cannot be validated at present and registered dietitians should interpret results from this modality with caution.

Funding source: None

The Relationship between Grit and Growth Mindset and Educational and Professional Characteristics in Clinical Nutrition Graduate Students

Author(s): R. Tonnesen, H. Samavat, D. Riggiasso Radler, J. Willis, R. Brody; 1Hospital for Special Surgery, 2Rutgers University, 3University of North Carolina

Learning Outcome: To identify grit and growth mindset scores in clinical nutrition graduate students and understand the relationship between these traits and educational and professional characteristics.

Background: Grit and growth mindset are traits that may be helpful for health professions students’ success. This study aimed to assess grit and growth mindset in clinical nutrition graduate students at Rutgers University and identify associations between both grit and growth mindset scores and educational and professional characteristics.

Methods: A cross-sectional web-based survey was conducted in November 2020 using validated tools for grit and growth mindset. Mann Whitney-U and Kruskal Wallis tests were utilized to analyze the differences in grit and growth mindset scores between program enrollment, GPA category, participation in scholarly activities, and holding an advanced/specialist credential.

Results: Sixty-six students responded to the survey (response rate = 46.2%). The majority of participants were white (78.8%), female (92.4%), and enrolled in the Doctor of Clinical Nutrition (DCN) program (53.0%). Participants had a median grit score of 4.0 out of 5.0 and a median growth mindset score of 4.7 out of 6.0. No statistically significant differences were detected between grit and growth mindset and program enrollment, GPA, participating in scholarly activities, or having an advanced/specialist credential.

Conclusions: The results of this pilot study establish initial baseline data on grit and growth mindset among clinical nutrition graduate students. Grit and growth mindset scores were higher when compared to national samples. While no relationships were found between these scores and educational or professional characteristics, research should expand upon nuances that drive grit and growth mindset in clinical nutrition graduate students to inform future education interventions aimed at enhancing grit and growth mindset.

Funding source: None
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A TeleNutrition Program’s Impact on Outpatient Medical Nutrition Therapy for a Healthcare System in Response to the COVID-19 Pandemic

Author(s): J. Pilanski, S. Butler, M. Kubli; Sodexo

Learning Outcome: Participants will be able to describe how a TeleNutrition program impacts number of appointments, appointment type (in-person/TeleNutrition), RDN billable time, and number of referring providers during the COVID-19 pandemic.

Background: The goal of this program was to overcome the disruptions in outpatient medical nutrition therapy services created by the COVID-19 pandemic. TeleNutrition quickly provided an accessible solution to meet the needs of our patients, hospitals and physicians.

Methods: Sodexo Nutrition Leadership introduced the HIPAA compliant TeleNutrition program to a three-hospital system in New Jersey. The first medical nutrition therapy (MNT) TeleNutrition patient was seen July 5, 2021, as part of this ongoing program. Registered Dietitian Nutritionists (RDNs) compared MNT program data from the second half of 2021 to the first half of the year. Outcomes tracked included number of appointments, appointment type (in-person/TeleNutrition), RDN billable time, and referring providers.

Results: TeleNutrition provided an accessible solution for patient care and led to an increase in services for this hospital system. A total of 423 appointments were completed from July through December 2021, demonstrating an increase of 398% in total appointments (96% excluding new bariatric service) compared to the first half 2021. TeleNutrition was used for 298 (70%) appointments. There was a 318% increase in RDN billable time and a 58% increase in referring providers.

Conclusions: Implementation of TeleNutrition assisted both patients and physicians, offering a solution to the pandemic’s interruption in care; Sodexo was able to quickly expand services which can be replicated at other hospital systems to enhance and grow outpatient nutrition services. Implementation of TeleNutrition provides access to MNT services for patients, improving continuum of care and can lead to a revenue stream for RDNs and healthcare systems.

Funding source: Program implemented by Sodexo for CarePoint Health System, a private, for-profit healthcare system in New Jersey. CarePoint health provided funding for Tele-Nutrition software program on ongoing basis. Registered Dietitian salaries are paid by CarePoint Health or Sodexo based on site within system.

Focused Interdisciplinary Learning Experience Improves Awareness of Interprofessional Health Professions Skills

Author(s): K. Sears-Bruening1, K. Tindall2; 1Syracuse University, 2Upstate Medical University College of Health Professions

Learning Outcome: Describe a 4-pronged, focused interdisciplinary education (IPE) experience that resulted in increased appreciation of interdisciplinary collaboration and communication and how integrated approaches may improve patient care.

Both the Institute of Medicine and the Academy’s Council on Future Practice prioritize creating collaborative-ready practitioners to provide health services as members of an interdisciplinary team. We designed and evaluated a focused cross-disciplinary learning experience for dietetic students with respiratory therapy (RT) to explore effects of a 4-component learning activity on students’ awareness of interprofessional skills, such as interdisciplinary communication and collaboration, role awareness, and recognition of opportunities to integrate and improve patient care. Sixteen senior and 3 graduate dietetic students visited the RT teaching lab in small groups where they 1) participated in a breathing exercise designed to simulate chronic obstructive pulmonary disease; 2) observed respiratory intervention techniques; 3) listened to a case scenario presentation where the respiratory care and nutrition care were non-congruent; and 4) observed or attempted to intubate a mannequin. Students wrote open-ended learning reflections to 5 question prompts that we evaluated qualitatively for commonalities and evidence of learning. Results showed that all students found the experience valuable with 16/19 reporting increased appreciation of the importance of interprofessional communication and collaboration; 16/19 reporting increased knowledge of respiratory diseases/treatment effects on nutrition status; 9/16 reporting that seeing breathing apparatus and feeding tubes placements increased clinical knowledge; and 7/16 reporting increased comprehension of the relationship between malnutrition and compromised respiratory status. This focused approach could be extended to dietetic education with additional health care disciplines to improve interdisciplinary skills and merits further investigation.

Funding source: None

Keep in ‘Mind’ Partnering with the Alzheimer’s Association to Expand Reach and Expertise

Author: A. Nikolai; UF/IFAS Extension Polk County

Learning Outcome: Discover how they could work with the Alzheimer’s Association to expand reach, credibility, and knowledge and be a partner in the fight against Alzheimer’s disease.

Background: The number of Americans ages 65 and older is projected to nearly double from 52 million 2018 to 95 million by 2060. An estimated 6 million Americans, the number increasing with age, are living with Alzheimer’s disease, and this number is projected to nearly triple by 2060. Studies indicate that activity and a nutritious diet may reduce risk, putting dietitians in a key position to help combat this disease.

Method: UF/IFAS Extension Agent and dietitian Andrea Nikolai partnered with the Alzheimer’s Association’s starting in 2020 and co-taught four online classes reaching over 145 people. The Association’s program manager did an overview of the four tenets of aging well, and Nikolai followed by talking about the research-based MIND diet, a diet created to help prevent dementia and slow cognitive decline.

Results: Nikolai was already teaching classes on the diet, but with the partnership, was able to expand her audience and increase credibility. The classes resonated with participants, and 88% of respondents intended to eat more brain healthy foods and 98% were extremely or very satisfied with the class.

Scalability: The Alzheimer’s Association is nationwide and uses community educators to teach their Healthy Living for the Brain and Body class. The expertise of dietitians creates an ideal partnership with the Alzheimer’s Association to enhance this program. As additional research emerges about lifestyle intervention, this partnership can create a foundation for dietitians to be key players in the fight against Alzheimer’s Disease.

Funding source: None –employed by the University of Florida jointly with the Polk County Board of County Commissioners

MyPlate MyWay: Creating a Customizable Digital Tool for Learners to Explore MyPlate Guidelines with Localized, Culturally-Specific Foods

Author(s): B. Chamberlin1, P. Martinez2, D. Sauter1, M. Plaza-Delestre1; 1New Mexico State University, 2University of Puerto Rico Mayaguez Campus

Learning Outcome: Create a customizable online digital tool which would allow learners to explore MyPlate categories by using foods specific to their diet and culture, as part of a larger educational program.

Background: Users of USDA’s MyPlate plan their meals and daily menu, using extensive MyPlate resources. However, learners can struggle with their unique food choices. Localized guides can help connect culturally or regionally specific foods to the guide, but learners can still struggle with combination foods, such as Mofongo. A team of registered dietitians, nutrition educators and media producers sought to create an affordable, extensible tool to provide culturally-specific interactions with MyPlate.

Methods: Using the Transformational Learning Game model and extensive formative testing with diverse users, the team worked in two separate markets (New Mexico and Puerto Rico) to create a usable pilot which was modifiable to include regional foods for those audiences. They refined a base list of foods, experimented with the number of customizable items, and built in support for multiple languages. The team also included MyPlate messaging and educator support resources.

Results: MyPlateMyDay.org (anticipated release, June 2022) will initially offer two localized sets of food in English and Spanish. User testing with educators and learners in extension and ICAN (Ideas for Cooking and Nutrition) revealed high usability and enjoyment, particularly regarding the ability to customize diets. Now that the team has completed the customizable framework for specific locations, they seek new partners to expand the tool.

Conclusion: In addressing the change driver for Society’s Future Needs, this tool reflects embracing the diversity and cultural values of clientele. More importantly, the tool offers a customized tool which local entities can afford.

Funding source: The project was funded, in part, using carryover funds from New Mexico State University’s Expanded Food and Nutrition Education Program (EFNEP). Additional funding contributed by USDA National Institute of Food and Agriculture Project Award No. 2015-68001-23248: Improving The Health Of Hispanic Children And Their Families With A Community-Based Curriculum: “Abriendo Caminos”.

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Funding source: None

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Poster Session: Future Practice

Research Engagement in Undergraduate Dietetics Students: A Scaffolded Approach

Authors: M. Ludy, C. Hamady; Bowling Green State University

Learning Outcome: Identify 1–2 strategies for engaging undergraduate dietetics students with research.

Background: The Academy characterizes research as “the backbone of dietetic practice” and ACEND standards include “integration of scientific information and translation of research into practice.” Yet, students often have poor attitudes toward and misconceptions about research. This innovation’s purpose was to demystify the research process by scaffolding experiences across the undergraduate dietetics program.

Methods: Research experiences were scaffolded across a large, Midwestern university’s undergraduate dietetics program (total enrollment = 113). Required experiences included attending scientific poster presentations (freshmen), mock-grant writing in a research methods course (juniors), conducting a community-based scholarly project (seniors), and participating in monthly educational seminars (all students/faculty). Optional experiences included participation in faculty/graduate student-led research projects, self-designed honors projects, client-based research independent studies, and competitively funded undergraduate scholarly projects. Student themes regarding research experiences were determined using the Delphi technique.

Results: Common themes generated by students related to appreciation for the research process, unexpected enjoyment of research engagement, and importance of research for moving the dietetics field forward. Students commented on the value of opportunities to connect with peers across all programmatic levels. Outcomes of research engagement included national presentations at ACSM, ASN, FNCE, and IFT (n=6 posters, 9 students in 2021).

Conclusion: Expansion of research exposure and engagement across all levels of the undergraduate dietetics program better prepares new/early-career professionals for “Navigating Future Practice” and conducting the necessary research for moving forward with change drivers affecting the field. Early research introduction may improve student attitudes regarding research leading to increased confidence in performing, interpreting, and communicating nutrition information.

Funding source: None
Tuesday, October 11

Poster Sessions
Project or Program Report
Abstracts
A Community Garden Initiative and Needs Assessment: Involvement of Undergraduate Dietetics Students

Author(s): J. Egbert, C. Hamady, M. Ludly, C. Haar; Bowling Green State University

Learning Outcome: Upon completion, participants will be able to describe how a community-based needs assessment and community gardening initiative were used in undergraduate dietetics education.

Introduction: Food insecurity is an under-addressed issue within many rural communities, particularly leading to negative health outcomes. The Academy Foundation's Future of Food initiative encourages nutrition professionals to "raise awareness of food insecurity as a public health issue and increase access to adequate amounts of nutrient dense food for all Americans." Thus, this project's purpose was to engage undergraduate dietetics students in expanding a community garden and conducting a food insecurity-focused needs assessment.

Methods: Within a rural northwest Ohio community (population=946), senior-level dietetics students expanded the community garden by building raised beds, purchasing plants, maintaining gardens, harvesting produce, developing garden-fresh recipes, distributing produce, and partnering with the local food pantry to donate excess. Additionally, the students developed a survey that was administered via community-based social media platforms to evaluate food insecurity knowledge and resource awareness.

Results: Garden beds planted by dietetics students yielded roughly 40 pounds of U-pick and free table pick-up along with 67 pounds of food pantry donations. Community members (n=41) responded to anonymous surveys. Less than half (43%, n=18) accurately defined food insecurity, approximately one-third (36%, n=15) were aware of local food insecurity resources, and few (14%, n=6) knew about the community garden.

Conclusion: This project provided undergraduate dietetics students with a hands-on opportunity to expand their knowledge of food insecurity and community-based needs assessment, while demonstrating gaps in food insecurity knowledge and resource awareness among community members. Future projects should explore adding educational sessions facilitated by dietetics students and expanding community partnerships (e.g., library, schools).

Funding source: Students received an awarded $400 grant from the BGSU Center for Research and Scholarship (CURS) to complete the project along with a total of $250 in community donations including monetary and product donations.

Food Insecurity Needs Dietitians: Dietitians F.I.N.D. a Way to Help More During the Covid Pandemic

Author(s): L. Russo, K. Giboyeaux, J. Gilman, B. Jordan, M. Myers, A. Schaeffer, K. Urban, C. Wong; Memorial Sloan Kettering Cancer Center

Learning Outcome: Upon completion, participants will be able to describe roles RDNs can play in Food Insecurity screening, food resource referrals and nutrition education for patients during the COVID pandemic and beyond.

Food Insecurity (FI) is prevalent during the Covid Pandemic. It is associated with poor health outcomes in cancer and other chronic diseases. Dietitians are in a unique position to help by screening for FI. Registered Dietitian-Nutritionists (RDNs) at Memorial Sloan-Kettering (MSK) initiated a department-wide FI screening program June 2020. The RDNs were trained how to screen for FI and guide patients to resources including pantries, organizations, education booklets and others. Outpatient RDN initial assessment notes were modified to include FI section for documentation. Follow-up contact was made by RDNs to determine patient satisfaction with the resources referred to. In addition, patient education booklets to help with FI and resources were created. Prior to the FI screening program, two RDNs screened patients for FI, while after implementation, this increased to 15 RDNs. From June 2020-January 2022, a total of 160 patients were identified to have FI by RDNs and were referred to food resources including MSKs food pantries. Follow-up contact continues and to date, 54 patients who were FI were contacted. The resource was utilized by 38 patients and all responded that it was helpful. Of the 16 patients who did not use the resource, the RDN was able to correct issues for 7 patients, and 9 patients changed their minds, or their status changed. RDNs were able to transition to be an initial contact to screen for FI, refer those in need to helpful resources, and provide appropriate education materials. FI screening programs can be successfully implemented by RDNs.

Funding source: None

Let's Talk about Hunger

Author: Y. Ang; Tangelo

Learning Outcome: obtain actionable ideas relating to collaboration with physicians and managed care plan providers to address key social determinant of health such as food insecurity to reduce health inequality

California Medi-Cal takes the lead to build social drivers of health, including food insecurity, as reimbursable service in managed care plan as of Jan 2022. A transformation in health care is underway, providing an opening for dietitians to drive crucial conversations about food insecurity, and to create innovative partnerships with community to close the gap on health inequity. A partnership was initiated with a primary care clinic that serves the uninsured and undocumented immigrants in an impoverished region in the county. Clinicians habitually tell patients to take their medicine with food but fail to recognize many don't have money for food. Clinicians received training in food insecurity screening and to address hunger in a dignified way. The Hunger Vital Sign is built into the standard patient assessment at every doctor's visit.

Hunger screening allows timely preventative intervention. A collaboration with a local managed care plan allows food boxes to be delivered to the clinic regularly. Besides a drug prescription, patients who are screened food insecure now get a bag of food before leaving the clinic. The managed care digital platform allows real time data tracking, and establishment of a close-loop care plan: clinicians can follow-up with food insecure patients on food assistance program, nutrition education, and other social programs.

Let's talk about hunger especially in moments when it matters the most, such as when working with the under-resourced communities that face structural racism in the health care system. The inter-sector system-wide collaboration allows our care model to be scalable.

Funding source: None
Leveraging Social Media With Community Partner Amplification As Part Of SNAP-Ed Implementation

Author(s): D. Avelino, K. Killison, M. Waring, V. Duffy; University of Connecticut

Learning Outcome: Understand which Facebook post types received higher reach and engagement in the context of child nutrition and family meals.

Social media holds promise to engage low-income families with relevant and fact-based food/nutrition information. We aimed to harness community partnerships to increase reach to low-income communities and determine the characteristics of organic posts that produced the most engagement. In fall 2021, we expanded partnerships in target communities (e.g., Hunger Action Teams, agencies reaching low-income families, community organizations). We included posts from HealthyFamilyCT Facebook Page, focusing on family-centered content guided by the Snap Smart, Eat Well, Feel Great theme, Dietary Guidelines, and previous quantitative and qualitative research. We manually abstracted Facebook posts’ reach and engagement (likes, comments, shares, post clicks) and categorized posts as one of nine post types. Change in total reach was assessed from 9/22/2021-1/12/2022 (N=121; reach=22,690, 187.52/post) versus 6/01/2021-9/21/2021 (N=112; reach=1,972, 1760/post). Among the subset of posts targeting families with children (N=43) in fall/winter 2021/2022, reach was 8731 with total engagement of 1239 (including 857 video clicks). Recipe posts (N=18) had the highest reach (5110, 284/post) and engagement (999, 56/post). Cooking videos ≤30 seconds (N=3) achieved highest reach (2900, 967/post) and engagement (892, 297/post) followed by posts with themed recipes (N=6; reach=1869, 387/post; engagement=96, 26/post). Lowest total reach and engagements were seen by video posts promoting food access resources (N=2; reach=67, 33.5/post and engagement=14, 7/post). Local amplification increased the reach of social media posts. Objective engagement data from Facebook can help organizations identify post topics that effectively elicit engagement, disseminating fact-based nutrition information to encourage healthy eating in communities.

Funding source: None

Piloting a Farm to Early Childhood Education Program in a Burmese Community

Author(s): O. Ford1, A. Rainville1, R. Bessire2; 1Eastern Michigan University, 2Eastern Michigan University Center for Health Disparities Innovations and Studies

Learning Outcome: Upon completion, participants will be able to identify techniques for initiating Farm to ECE programming.

Calhoun County is located in southwestern Michigan. The poverty rate is 13.9% and the median household income is more than $10,000 less than that of the state. This area of Michigan is home to a large Asian immigrant and refugee population, particularly Burmese. These families face many barriers including language, low socioeconomic status, lack of access to healthcare, and limited access to culturally relevant food. Additionally, community partners indicated that there is great need for increased access to healthy foods and education related to nutrition and chronic disease. Researchers from the Eastern Michigan University Center for Health Disparities Innovations and Studies were awarded a grant to support Farm to ECE initiatives. During the funding period researchers partnered with Catching the Dream Learning Center, which serves a predominantly Burmese community with many recent immigrants. Our Farm to ECE programming included providing training on childhood nutrition and incorporating Farm to ECE into curricula as well as providing supplies needed to plant and tend onsite gardens. Home gardens are common in the Burmese culture so adding a garden to the ECE center provided young children not only the traditional benefits of Farm to ECE programming but a connection to their culture as well. Future collaborations will include purchasing monthly CSA boxes to be included in the food and nutrition program offered to students, continued support for onsite gardening, and the creation of nutrition standards for the foods served at the ECE, which will incorporate produce from local growers and the onsite gardens.

Funding source: Association of State Public Health Nutritionists CABBAGE grant

Prioritizing the Food Selection Process: A Key Part of the Disaster Recovery Plan

Author(s): L. Langhals, M. Ludy, T. Brackenbury, D. Borton, A. Corey; Bowling Green State University

Learning Outcome: Upon completion, participants will be able to describe the need for disaster recovery foods to align with the USDA Dietary Guidelines and meet the cultural needs of the people.

Background: Natural disasters can strike at any time. Survivors often rely on aid agencies (e.g., FEMA) for food. Interruptions to power and clean water, along with crop damage and livestock loss, create challenges in getting adequate nutrition to survivors. After Hurricane Maria, 46% of all emergency foods were high in saturated fats, sodium, or added sugars; 41% were snacks or sweets. Fruits, vegetables, protein, and grains all felt short of Dietary Guidelines targets. The purpose of this qualitative study was to elicit feedback from dieters about their post-hurricane experiences with emergency food distribution.

Methods: Interviews of dietitians from San Juan, Puerto Rico (Hurricane Maria) and New Orleans, Louisiana (Hurricane Katrina) were conducted via Zoom during the 2020-2021 academic year. Interviews were conducted by three senior-level dietetics students and averaged 30-60 minutes. Open-ended questions were used to stimulate conversation (e.g., observations, challenges, suggested improvements, advice for individuals/organizations). Common themes were determined through iterative discussion and peer consensus.

Results: All dietitians commented that the spices in emergency foods were different from those typically consumed by survivors, contributing to poor intake. Candy and sweet treats were frequently distributed to survivors. Dietitians recommended that the foods selected should be centered around the culture of the people needing assistance, meet the Dietary Guidelines, and be conducive to many chronic health conditions.

Conclusion: To achieve the Academy’s vision of being “a world where all people thrive through the transformative power of food and nutrition,” improvements to the post-disaster food selection process are required.

Funding source: $750 Grant from Bowling Green State University Center for Undergraduate Research and Scholarship.

Using Service-Learning to Teach the Nutrition Care Process and Gather Data to Address College Student Food Security

Author(s): L. Biediger-Friedman, H. Okafor, H. Thornton, S. Kennedy-Ndaw; Texas State University

Learning Outcome: Discuss the influence of the home food environment on college student food security and identify key components of service-learning projects for nutrition students.

Background: College students are a unique population with a higher risk of food insecurity. Few interventions with this population have explored the home food environment (HFE). Peer-led, community-based participatory research can be a means to address food insecurity and engage nutrition students in hands-on learning to build competency in addressing food insecurity.

Methods: This project 1) implemented a HFE assessment to identify facilitators, barriers, and supports for college student food security; and 2) engaged graduate-level nutrition students as researchers carrying out the NCP and developing tailored interventions with participants from a campus food pantry. With each participant, student researchers administered a demographic survey, a structured interview, and guided HFE assessment. Data were coded, analyzed, and reported to each participant. Student researchers used co-active coaching with participants to develop, implement, and evaluate a tailored intervention. Student learning was evaluated on a 5-point scale in five categories of their application of the NCP. This project was conducted under the IRB for evaluation of the campus food pantry.

Results: Eight participants were assessed by eight pairs of student researchers. Facilitators and barriers of food security within the HFE were identified, such as kitchen equipment, accessing resources, and the role of social support. Interventions addressed food sharing, accessing recipe databases, meal building techniques, and social support. Both student researchers and participants reported benefits from participation.

Conclusion: This project provides 1) necessary data about the contribution of the HFE to college student food security and 2) an example of practice-based service-learning for graduate-level nutrition students.

Funding source: None
Wellness on Wheels: Integrating Childhood Obesity Prevention Strategies in an Outdoor Nutrition Education Program in a Community Facing Food Insecurity and High Rates of Childhood Obesity

Author(s): A. Schepers1, K. Altoonian1, J. DeMasco2; 1Cohen Children’s Medical Center/Northwell Health, 2Cohen Children’s Medical Center

Learning Outcome: Upon completion, participant will be able to describe the steps for a school-based MyPlate nutrition education program that includes recipe demonstration, food access, and promotion of child-family home meal preparation.

Wellness on Wheels is a nutrition education program through a mobile van with outdoor video monitor and awning to create an “outdoor classroom,” developed to continue health education during the pandemic in food insecure communities where approximately 85% of the student population is Hispanic. Picnic baskets, life-sized food models and MyPlate posters with food stickers are used to teach grades K – 3 about the five MyPlate food groups, the importance of each group and the value of trying new foods. A video of a chef preparing a recipe using vegetables that will be distributed is shown. RD and health educators imitate the chef’s steps and invite children to join. Students receive a fresh vegetable bundle, laminated MyPlate placemat, and bilingual cookbook with twelve recipes, including two blank pages to create their own recipes. Posters were returned to the classroom for continued education. Of 1,865 students educated, 52.3% completed a one-page evaluation tool; 88% correctly labeled 3 out of 5 food groups; 57.8% reported trying the vegetable; 91.3% checked off at least one healthy habit goal. Student comments: “My favorite part was the cooking video when we pretended to make it.” “This was the best school trip.” “Me and my mom actually cooked ‘eksparagus’ and I never thought I would like ‘eksparagus’.” Our program demonstrates the potential benefits of hands-on learning to complement nutrition education to promote healthy eating behaviors. Future components of WOW will include units on hydration, physical activity, vegetable-planting, and expanding our reach with a second van.

Funding source: Kohl’s Keeping Kids Healthy Program - Grant Mother Cabrini - Grant Rite-Aid - Grant Subaru’s Share the Love Program - Corporate
A Comparison of Degree of Food Insecurity and Food Choice Motives Among College Students

**Author(s):** N. Nieszwitz, J. Kershaw, C. Hamady, B. Fevrier; Bowling Green State University

**Learning Outcome:** Describe food choice motive differences among college students affected by varying degrees of food insecurity.

**Background:** Dietary quality declines during college and is exacerbated by food insecurity (FI) and substance use (SU), often leading to negative health and academic consequences. The purpose of this study was to determine if a relationship exists between food choice motives (FCM) and FI.

**Methods:** College students aged 18-30 were recruited by Facebook advertising. The USDA 6-item Food Security Survey Module (FSSM); Alcohol Use Disorders Identification Test (AUDIT); Extended Drug Use Disorders Identification Test (DUDIT-E); and Food Choice Motives Questionnaire were used. Categories were FI, SU, FI+SU, or Neither based on composite scores. FI degree was determined by FSSM raw scores. Relationships between FCM and FI degree were assessed using Pearson correlations. FCM within groups were analyzed using Friedman and Dunn-Bonferroni post hoc tests.

**Results:** 734 participants (n=536 male, age=23.98 years) completed the survey. Importance of each FCM category increased with FI degree for participants (p<0.001). This observation was less pronounced when SU was present.Significant differences among motives were only observed in the SU group, with organic as the highest, significantly more than price, familiarity, and local/small-scale production (p<0.01). No FCM category was significant for FI+SU.

**Conclusions:** FCM importance increases as FI intensity increases, possibly due to food depressive behaviors; this relationship does not exist with coinciding SU. Substance use may attenuate food obsession among FI+SU individuals, perhaps from psychological effects of SU. This suggests that SU may alter food motivations among college students, providing RDAs/NDTRs opportunities to educate on healthy habits addressing FI and FCM.

**Funding source:** Bowling Green State University (BGSU) Center for Undergraduate Research and Scholarship (CURS) Grant; BGSU Honors College Grant; BGSU College of Health and Human Services

A Qualitative Review of the Role Of Macular Carotenoids in the Progression of Age-Related Macular Degeneration

**Author(s):** K. McNulty, E. Metallinos-Katsaras; Simmons University

**Learning Outcome:** Upon completion, participant will be able to list the macular carotenoids, describe their association in the progression of age-related macular degeneration, as well as specify distinct and effective supplement dosages.

**Background:** Age-related macular degeneration (AMD) is the leading cause of blindness among the aging population in developed countries. Lack of the macular carotenoids, lutein and zeaxanthin, may be related to AMD pathogenesis. This review critically assesses current research to better understand these associations.

**Methods:** Research published from 2010-2022 was identified using key terms macular degeneration, central blindness, retinal maculopathy, lutein, and zeaxanthin. Inclusion criteria: peer-reviewed articles, published in English. This generated 536 articles. Duplicates and non-primary source articles, those without AMD staging or mention of carotenoids were excluded. Eleven relevant published studies were identified through database searches and citations of relevant studies.

**Results:** Studies included one non-controlled trial, one prospective cohort study, eight randomized controlled trials, and one case-control study. Studies used visual performance and the presence of structural abnormalities as disease indication. Nine of the 11 studies showed a significant association between carotenoids and either a reduction in AMD risk or improved visual parameters (p<0.05). Two of three studies using supplement formulas including meso-zeaxanthin, lutein, and zeaxanthin reported change in visual function from baseline, while no supplement with only lutein and zeaxanthin reported any change in visual performance. Supplement formulas with only lutein or zeaxanthin also reported increases in serum carotenoid concentrations during studies duration.

**Conclusion:** Supplementation of macular carotenoids appears safe and may mitigate AMD risk at dosages of 10mg lutein, 10mg meso-zeaxanthin, 2mg zeaxanthin.

**Funding source:** No funding was granted. This literature review was performed as part of DPD coursework.

A Snapshot of Modalities for Recruitment of African Americans for an Intensive Behavioral Therapy Weight Management Intervention during the COVID-19 Pandemic

**Author(s):** C. Navarro1, J. Reese-Smith3, M. Johnson3; 1The University of Southern Mississippi, 2Houston Fire Sciences of the National Institutes of Health under grant # P20GM103476.

**Learning Outcome:** Upon completion, the participant will be able to identify two successful recruitment methods of a minority population for a weight management intervention designed to improve nutrition and physical activity behaviors.

**Methods:** A Snapshot of Modalities for Recruitment of African Americans for an Intensive Behavioral Therapy Weight Management Intervention to increase program commitment from recruitment to enrollment.

**Results:** A total of 70 eligible participants who were recruited completed the module and 28 were included in the study. Students were uncertain how to estimate their household income. Results: Sixty-seven (n=21) students. Survey items were adapted of the USDA Food Security Survey Module to develop a validated measure of food insecurity among college students.

**Conclusions:** Food insecurity (FI) among college students in the U.S. is significantly higher than the general population. The U.S. Department of Agriculture Food Security Survey Module (FSSM) has been widely used to estimate FI prevalence among college students but has not been validated in this population. To better understand the prevalence of FI among college students, this study used qualitative techniques to adapt the 10-item FSSM with 2-item food sufficiency screener for this population.

**Funding source:** None

Adaptation of the USDA Food Security Survey Module for College Students

**Author(s):** B. Munger1, A. Musich2, B. Reeves1, J. Warrick1, C. Kartchner2, K. Lee3, J. Varnon2, A. Wolcott1, S. Grutzmacher1, R. Richards2, N. Stokes2, J. Jackson1; 1Oregon State University, 2Brigham Young University

**Learning Outcome:** Upon completion, participant will be able to evaluate the adaptation of the USDA Food Security Survey Module to develop a validated measure of food insecurity among college students.

**Background:** Food insecurity (FI) among college students in the U.S. is significantly higher than the general population. The U.S. Department of Agriculture Food Security Survey Module (FSSM) has been widely used to estimate FI prevalence among college students but has not been validated in this population. To better understand the prevalence of FI among college students, this study used qualitative techniques to adapt the 10-item FSSM with 2-item food sufficiency screener for this population.

**Methods:** Data were collected in two phases at three universities. Multi-step data analyses were used in each phase. Individual cognitive interviews (n=20) were conducted with food secure and food insecure students. Participant feedback and interpretation of survey items were used to adapt the items. Next, the adapted survey was used to conduct focus groups (n=11) with food secure (n=16) and food insecure (n=21) students. Survey items were further adapted based on focus group findings.

**Results:** Students were uncertain how to estimate their household income. They also expressed confusion about the wording and definitions used by some survey items. Based on feedback, we removed 3 items and adapted 11 items, such as adding a definition for “balanced meals” and describing who to include in a “household.”

**Conclusions:** College students are a unique population due to vast variability in living situations and financial circumstances. An adapted and validated measure of FI may provide a better estimate of the prevalence among college students, which could help institutions develop appropriate resources to support more equitable access to food.

**Funding source:** None
Adverse Childhood Experiences and Food Insecurity in Emerging Adulthood: Findings from The EAR 2010-2018 Study

Author(s): N. Larson, V. Hazzard, S. Mason, M. Brunening, M. Laska, D. Neumark-Sztainer

University of Minnesota, Arizona State University

Learning Outcome: Identify two or more types of childhood trauma and describe how these experiences are related to food insecurity during the emerging adult life stage.

Background: Research suggests that individuals with adverse childhood experiences (ACEs) are at higher risk for health problems and have lower average incomes in adulthood. Determining how ACEs may be related to food insecurity over the life course is critical to informing health programs and policies. This study aimed to examine the relationship between ACEs and food insecurity during the transition to adulthood.

Methods: Population-based study (Eating and Activity over Time) of young people who completed surveys as adolescents in 2009-2010 and follow-up surveys in 2017-2018 (mean age-22.0 years). Participants were recruited from 20 schools in Minneapolis-St. Paul, Minnesota. Past-year food insecurity was reported at both time points and histories of six ACEs (e.g., physical abuse) were reported at follow-up. Complete data were available for 1492 participants.

Results: The unadjusted prevalence of food insecurity was 32.6% among emerging adults who reported one or more ACE compared to 17.2% among those with no ACE (P < 0.001). Models used to separately examine each type of ACE showed food insecurity was elevated among survivors of all ACE types (all P < 0.001). Similar relationships were observed when models accounted for demographic characteristics, depressive symptoms, parental education, and adolescent food insecurity. For example, childhood abuse survivors had an adjusted food insecurity prevalence of 26.3% compared to 16.6% among those with no abuse history (P < 0.001).

Conclusions: Childhood abuse and other ACEs are consistently related to food insecurity in early adulthood. There is an opportunity for food assistance programs to provide trauma-informed services and facilitate connections to mental health providers.

Funding source: This study was supported by Grant Numbers R01HL127077 and R35HL139853 from the National Heart, Lung, and Blood Institute (PI: Dianne Neumark-Sztainer). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Heart, Lung, and Blood Institute or the National Institutes of Health. The effort of author Vivienne Hazzard was supported by Grant Number T32MH082761 from the National Institute of Mental Health (PI: Scott Crow).

Best Practices for Partnering with Black Churches to Recruit African American Women into mHealth Weight Management Programs

Author(s): D. James, D. McQueen; University of Florida

Learning Outcome: Outline strategies for partnering with Black churches to recruit African American women to mHealth weight management programs

Background: African American women (AAW) are still underrepresented in mHealth research despite the high ownership of smartphones and willingness to participate in different types of research. This qualitative study examined strategies for partnering with Black churches to recruit AAW into mHealth weight management programs.

Methodology: Eleven focus group triads (n=60) were conducted with AAW. The Framework Method was used to systematically manage, organize, and analyze data into themes by age group.

Results: There was unanimous agreement that churches are safe and sacred places for recruitment. Four major themes emerged: 1) churches are safe and sacred spaces; 2) representation matters; 3) target churches with active health ministries; and 4) recruit within ministry and fellowship groups. Younger women emphasized that recruiters should be vetted. "We want to see the face of the project, not just someone behind a computer sending email from the church's directory."Middle-aged women focused on the logistic of recruiting and leveraging the authority of the pastor, "I'll show up if the pastor asks me to." Older women were mainly concerned about data privacy, "I need to know what they're doing with my information and if they're watching me all the time." They also emphasized the importance of building trust with the community before the program begins.

Conclusions: Opportunities exist for mHealth researchers to partner with Black churches to recruit AAW into mHealth weight management programs. Recruiting from churches also has the potential to snowball from the congregation to their social network.

Funding source: Institutional seed grant

COVID-19 and Health in Children and Adolescents in the U.S.

Author(s): S. Mayra, J. Kandiah, C. McIntosh; Ball State University, Ball State University School of Nursing

Learning Outcome: Upon completion, participant will be able to describe how COVID-19 impacted health in children and adolescents in the U.S.

Background: The COVID-19 pandemic necessitated nationwide closures of kindergarten through 12th grade (K-12) schools. Stay-at-home orders and social distancing mandates were also employed to mitigate the spread of SARS-CoV-2. The purpose of this systematic review was to synthesize the existing literature on how the COVID-19 pandemic impacted K-12 students' eating patterns, physical activity, and sleep in the U.S.

Methods: Utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, a literature search was conducted between October and December 2021. Inclusion criteria were studies focused on COVID-19 and health-promoting behaviors in students enrolled in K-12 schools since March 2020. International studies were excluded.

Results: Mixed findings were observed for eating patterns whereby the consumption of unhealthy savory and sweet items and healthful snacks, including fruit and vegetables increased. Reductions in physical activity and disrupted sleep routines, including later bedtimes were also observed. Heterogeneity in methodological procedures may limit the generalizability of these findings.

Conclusion: In the U.S., emerging data suggest that select health-promoting behaviors were negatively impacted by the COVID-19 pandemic. Given that prolonged unhealthy eating patterns, physical inactivity, and poor sleep contribute to chronic disease risk, public health initiatives that increase health-promoting behaviors are warranted.

Funding source: None

COVID-19’s Effect on Food Choices, Food Security, Eating Behaviors, and Hygiene Practices

Author(s): A. Gaddis, H. Colleran, R. Claro Da Silva; North Carolina A&T State University

Learning Outcome: Upon completion, the participant will be able to describe changes in dietary and hygienic habits of North Carolina residents during the first 12 months post-quarantine.

Background: The ongoing effects of COVID-19 have disrupted many aspects of individuals’ behaviors. The first 12-months post-quarantine may have altered dietary and hygienic habits. Therefore, the purpose of this study is to understand the changes in food choices, food security, eating behaviors, and hygiene practices of North Carolina residents during that time.

Methods: 72-question survey including demographics, dietary habits, food attitudes, lifestyle habits, food security, and food shopping behaviors was conducted from August 26, 2021, to December 26, 2021, with distribution through posted flyers and social media (IRB # 21-0162).

Results: 83 participants completed the survey. Most respondents were 18-24 years old; 82% female; 43% African American; 26% were in a four-person household; 27% with some college education; 34% full-time employed; and 59% single. Half of the participants reported no dietary changes (49%). However, 55% reported an increase in fruit and 48% vegetables. 51% indicated depression was prevalent, with 93% food secure. Regarding hygiene confidence and behaviors in food purchasing: 53% felt confident in the safety of the food they purchased and 41% used self-checkout to safeguard themselves while shopping. Lastly, 90% reporting mask use, 86% preferred employees to wear masks and 70% would like to see barriers at check-out when shopping.

Conclusion: While the participants reported little change in dietary consumption, they indicate presence of depression. Depression has been linked to diets high in fat and low in nutrients. Future studies are needed to further examine the long-term pandemic effect on depression, dietary intake, and hygiene habits.

Funding source: None
Crazy About Caffeine: Assessing College Students Caffeinated Beverage Content Knowledge

**Author(s):** E. Ormsby1, A. Lopez2, J. Van Wie1, A. Stejskal1, J. Campbell1, R. Ho1, M. Vines1, P. Policastro1, 2, Rutgers University, 3, Rutgers University Dining Services, 4, Rutgers University - New Jersey Healthy Kids Initiative

**Learning Outcome:** assess college students’ ability to rank five different caffeinated beverages from least caffeinated (LC) to most caffeinated (MC).

**Background:** A recent study found that 92% of college students consume caffeine. In small doses, caffeine can improve alertness, but over-consuming caffeine can cause insomnia, upset stomach, and anxiety. Therefore, assessing caffeinated beverage content knowledge among college students is significant to overall health and well-being.

**Objective:** To assess college students’ ability to rank five different caffeinated beverages from least caffeinated (LC) to most caffeinated (MC).

**Design:** Students ranked five 200oz caffeinated beverages available in dining operations (coffee, Monster Energy 108, Starbucks Frappucino 108, cola soda, and hot chocolate) from LC to MC.

**Participants/Setting:** Research participants were a convenient, random sample of college students in campus dining operations over a three-day period (N = 128).

**Main Outcome Measure:** Student’s ability to correctly rank five caffeinated 200oz beverages from LC to MC.

**Analysis:** Descriptive statistics for frequency of correct and incorrect responses were performed along with t-tests to determine if there was a statistically significant difference in correct versus incorrect responses for each beverage.

**Results:** Greatest frequency for incorrect responses were for coffee (93%), followed by Monster EnergyDrink 108, Starbucks Frappucino 108, cola soda 55%, and hot chocolate. The lowest frequency of incorrect responses (10%) for each beverage indicated a statistically significant difference (p < 0.001) in the correct and incorrect responses.

**Conclusion:** There is a gap in students’ knowledge of caffeine amounts in common beverages, especially coffee and energy drinks. Considering the large percentage of students who consume caffeine, and negative side effects of over consumption, there is a need for education on the caffeine content present in common beverages.

**Funding source:** None

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Diet Quality and Interest in Receiving Nutrition and Lifestyle Intervention Among Adults Who Identify as LGBT/Queer During the COVID-19 Pandemic: A Descriptive Study

**Author(s):** J. Sackey1, M. Khan1, C. Rosmarin-DeStefano1, J. Torres2, D. Finkel1, 1, Rutgers University, School of Health Professions, 2, North Jersey Community Research Initiative (NJCRRI), Rutgers University

**Learning Outcome:** Upon completion, participants will be able to describe the diet quality of adult LGBT/Queer during the COVID-19 pandemic as well as their interests in receiving nutrition and lifestyle interventions.

**Background:** Adults who identify as lesbian, gay, bisexual, transgender, queer, intersex, or asexual (LGBT/Queer) may be at increased risk of diet-related diseases like cardiovascular diseases due to poor diet quality, increased risk of being overweight/obese, higher rates of smoking tobacco and health disparities. This study aims to describe diet quality and interest in receiving nutrition and lifestyle interventions among adults who identify as LGBT/Queer during the COVID-19 pandemic.

**Methods:** Fifty LGBT/Queer adults participated in this pilot study and completed a web-based survey. Diet quality was assessed using the PrimeScreen questionnaire [score range 0-42, with higher scores indicating better diet quality], Frequencies and percentages were used to describe the results.

**Results:** The majority of the participants were <30 years old (60%); Non-Hispanic (64%) and were Black or African American (73.3%). Fifty-six percent identified as cisgender men; 8% as transgender men and 20% as transgender women. Sixty-four percent reported low diet quality scores (11-20) and 68% had a worse diet quality due to COVID-19. Participants were extremely/very interested in receiving nutrition and lifestyle interventions individually (50%), via a phone app (54%), or in a group setting (36%).

**Conclusions:** Despite the poor diet quality observed, LGBT/Queer adults sampled were interested in receiving nutrition and lifestyle interventions especially either individually or via a phone app making future virtual or mobile health (mHealth) interventions a possibility.

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Dietary and Lifestyle Practices of Individuals with Substantial Cardiovascular Risk

**Author(s):** C. Sealey-Potts, D. Witherspoon, J. Comeaux; University of North Florida

**Learning Outcome:** Describe dietary and lifestyle habits of individuals living with cardiovascular risk factors.

**Background:** Cardiovascular disease, stroke and diabetes are among the top leading causes of death for lower socioeconomic groups in the United States, with hypertension (HTN) and obesity being two of the main contributors. The purpose of this study is to describe dietary practices and indices of cardiovascular risk factors in an underserved population.

**Methods:** A mixed-methods approach was used to assess Head Start educators and staff. Established protocols for blood pressures, anthropometrics, modified food frequency and lifestyle questionnaires were used in data collection. The protocol was approved by the University’s Institutional Review Board and IBM-SPSS statistics version 27 was used for data analyses.

**Results:** Most (75%) participants were obese; 62.7% categorized with Stage 1 and/or 2 hypertension; and 66% were considered as high health risk using the waist-to-hip ratio calculation. Label reading for low sodium and fat contents were practiced by 54% and 36.5% of participants respectively. Significant interactions (p < 0.05) were found between label readers and frequent behaviors that can aid in the reduction of fat intake. No significant differences (p > 0.05) were found between label reading for sodium and frequency practices that can support lower sodium intake. Most participants (>80%) reported positive behaviors like cutting down on salt and changing eating habits to control blood pressure.

**Conclusion:** Findings from this assessment indicate high proportions of obesity, blood pressure and waist-to-hip ratios among participants. Current nutrition behaviors need bolstering to increase consistency in positive behaviors and self-efficacy. This highlights the need for a comprehensive culturally sensitive nutrition intervention program.

**Funding source:** None

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Eating Competence is related to Health- and Weight-related Perceptions and Behaviors in Early Childhood Education Providers

**Author(s):** C. Harris1, C. Whealdon1, J. Engelken2, E. Quinn3, C. Mornick1, 1, University of Washington, 2, University of Wisconsin-Madison Extension, 3, Washington State Department of Health

**Learning Outcome:** Upon completion, participants will be able to name characteristics associated with Eating Competence and adherence to the Satter Division of Responsibility in feeding among early childhood education providers.

**Background:** Primary aim was to describe associations between Eating Competence (EC) and health- and weight-related perceptions and behaviors among early childhood education (ECE) providers. Secondary aim was to explore the relationship between EC and adherence to the Satter Division of Responsibility (sDOR) in feeding.

**Methods:** Cross-sectional study of a convenience sample of adult ECE providers in Washington who had participated in a free online training on mealtime practices in 2020 and were working with children 0-6 years. Survey included the 16-item Satter Eating Competence Inventory (ecSI 2.0), the 12-item sDOR.2-6y, and items about demographics and health and weight-related perceptions. ANOVAs were used to evaluate relationships.

**Results:** Sample (N = 381) was 95.6% female, 62.5% trying to lose weight, mean age 44.0 years, with average ECE experience of 14.4 years. Total ecSI 2.0™ scores were highest among participants who perceived their general health to be “excellent” (P = 0.001), perceived their weight to be “just right or somewhat underweight” (P = 0.001), were “trying to maintain or gain weight” (P = 0.001), and who had not dieted within the past three years (P = 0.004). sDOR.2-6y™ scores were significantly related to years of ECE experience (P = 0.036).

**Conclusion:** Eating competent ECE providers exhibited superior health- and weight-related perceptions and behaviors, while those with low EC were more likely to perceive themselves as “overweight,” trying to lose weight, and in poorer health. The positive relationship between years of ECE experience and adherence to sDOR, incorporated into mealtime practices training, reflects the value of experience and application regardless of EC status.

**Funding source:** The two student co-authors, Jessa Engelken and Chelsea Whealdon, were funded through a Maternal & Child Health training program grant from the Health Resources & Services Administration.
Effects of a Cooking and Gardening Nutrition Intervention in Food Insecure College Students

Author(s): A. Macchi, C. Coccia; Florida International University

Learning Outcome: Describe the health benefits of a cooking and gardening nutrition intervention in food insecure college students.

Background: Food insecurity on U.S. college campuses ranges up to 59%, quadrupling the average national household food insecurity rate. In college students, food insecurity is correlated with unhealthy eating, lifestyle habits, and mental health issues. Although most universities offer food pantries, additional programs tailored towards food insecure students are needed.

Objective: The purpose of this study was to determine the effects of a Social Cognitive Theory-based, gardening, cooking and nutrition education intervention on health behavior mediators, fruit and vegetable intake, stress, and life satisfaction in food insecure college students.

Design: 8-week randomized control trial including weekly hands-on, in-person sessions.

Sample: Food insecure students were recruited from Florida International University (n=89). Participants were female (87%), white Caucasian (43.3%) and Hispanic (60%), and normal BMI (49%).

Statistical Analysis: Descriptive statistics and ANOVA were conducted using SPSS V23.0. Results were considered significant at p< 0.05.

Results: Students who participated in the intervention experienced a significant improvement in health mediators such as self-efficacy (F=17.65, p< .001), reciprocal determination (F=4.16, p< .045), and personal health views (F=5.65, p< .022), as well as fruit and vegetable intake (F=19.19, p< .001), stress (F=16.20, p< .001), and life satisfaction (F=18.99, p< .001) when compared to the control group.

Conclusions: The results of this study support the need for additional campus resources for food insecure college students. Multinodal intervention would be useful across all college campuses to help decrease negative mental and dietary effects of college food insecurity.

Funding source: None

Efficacy and Acceptance of a Plant-Based Complete Nutrition Toddler Drink Based on Almond And Buckwheat: A Retrospective Analysis Of A Parent Survey

Author(s): K. Bridges¹, F. Bar-Yoseph¹, R. Mizrahi¹, J. Vanderhoof²; Else Nutrition, ‘Harvard Medical School

Learning Outcome: Upon completion, participant will be able to describe why a novel whole food plant-based toddler drink based on buckwheat and almond butter is of interest to parents.

Background: There is increased demand for plant-based milk alternatives (PBMA) for clinical or lifestyle reasons. Many PBMA are deemed nutritionally inadequate for toddlers; likewise, professional organizations caution against “toddler formulas” due to high added sugars. A nutritionally adequate, low-sugar plant-based option for toddlers who cannot get enough nutrients from dairy-equivalents or diet is highly needed. This study examined parent perception of their child’s nutrition-related symptoms before and while consuming a novel whole-plant toddler drink based on almond and buckwheat.

Methods: Data from two waves of a cross-sectional survey administered by a 3rd party were retrospectively analyzed, after obtaining IRB waiver. Repeat consumers of the toddler drink elected to participate in an electronic survey (N=559). The survey was adapted from validated tools (ROME questionnaire; Bristol Stool Scale) to address usage, demographics, GI symptoms, and weight gain. Chi-square or Student’s t-test were used to detect statistical significance with α<0.05.

Results: Mean age of consumers was 19.1 ± 1.1 years. Many parents (55%) trialed PBMA prior; of these, 26.5% also used standard or soy/pea-based toddler formulas. Weight gain was improved (P< .0001) in 81% of those who reported previous poor weight gain. Improvement in GI symptoms was reported by 80.7%; half of them reported significant or complete relief of symptoms. The drink was well-tolerated with high acceptance.

Conclusion: Analyses revealed a high level of perceived clinical improvement in weight gain and gastrointestinal symptoms following use, suggesting a potential role for a buckwheat/almond-based toddler drink; however, results need to be confirmed in a controlled clinical study.

Funding source: This study was corporately funded through Else Nutrition Medical & Scientific Affairs.
Electronic Media Use During Family Meals Links with Health Status, Dietary Intake, Home Mealtime Environment, and Family Function

Author(s): C. Delaney, C. Byrd-Bredbenner; Rutgers, The State University of New Jersey

Learning Outcome: Describe differences in health and diet of mothers and their children (6-11y) and their home mealtime environments and family functioning by frequency of electronic media use during family mealtimes.

Associations between electronic media use at family mealtimes and health are not well understood. Thus, this study compared health, diet, home mealtime environment, and family functioning of 531 mothers and children in households reporting no (n = 185), infrequent (n = 129), or frequent (n = 217) media use during family mealtimes. ANOVA and Tukey follow-up tests indicated that children in No-Mealtime-Media households had significantly (p < 0.05) better health, than children in Infrequent-Mealtime-Media and Frequent-Mealtime-Media households (4.37 ±0.73SD, 4.12±0.82SD, 4.18±0.85SD, respectively; 5-point scale). Maternal health was similarly good across households. Fruit/vegetable servings/day of mothers and children did not differ by mealtime media frequency. Children in Frequent-Mealtime-Media households had significantly more sugar-sweetened beverage servings/day than those in Infrequent-Mealtime-Media and No-Mealtime-Media (0.22±0.32SD, 0.18±0.19SD, 0.09±0.12SD, respectively); households; findings were similar for mothers (0.12±0.14SD, 0.10±0.11SD, 0.08±0.12SD). No-Mealtime-Media households had significantly more family meals/week than Infrequent-Mealtime-Media households (13.92±5.80SD vs. 11.65±5.68SD); surprisingly, No-Mealtime-Media and Frequent-Mealtime-Media households did not differ in meals/week. Using 5-point scales, No-Mealtime-Media households reported significantly more support for positive mealtime environments (4.29±0.73SD, 4.12±0.82SD, 4.18±0.85SD, respectively; 5-point scale). Frequent mealtime media tends to be associated with poorer health and diet knowledge, injury, and resilience.

Results: Women had lower body satisfaction and higher shape, weight, and eating concerns compared to men. ANOVA revealed that lean athletes had significantly lower BMI compared to non-lean and mixed athletes in both men and women. However, there was no significant mean body shape satisfaction, eating, shape and weight concern score differences among athlete classification groups. In women only, the mixed athlete group had significantly greater eating restraint compared to non-lean and lean athletes, but this association became non-significant after controlling for BMI.

Conclusion: While women had higher disordered eating risk scores compared to men, there were little disordered eating behavior differences among and between athlete classification groups. Future research is warranted in larger samples sizes of athletes from varying sports to confirm our cross-sectional findings.

Funding source: New Jersey Agricultural Experiment Station

Evaluating the Effect of the Personnel Element of the Army’s Holistic Health and Fitness System on Health-Related Behaviors and Injury: An Interim Analysis

Author: J. Jayne; US Army Research Institute of Environmental Medicine

Learning Outcome: Describe the personnel element of the Army’s Holistic Health and Fitness System.

Objective: A tenant of the Army’s Holistic Health and Fitness (H2F) system is the embedding of additional medical personnel (e.g., registered dietitians) within combat units. The addition of these professionals is expected to optimize Soldier performance and maximize operational readiness by improving health-related behaviors of Soldiers. A longitudinal, observational research study is currently ongoing to examine the effect of the H2F performance team on health-related behaviors of Soldiers.

Methods: Soldiers from a unit with H2F personnel at Joint Base Lewis-McChord, WA (N = 317, 92% enlisted, 82% male, 26±7y/o) and Soldiers at a unit without H2F personnel, at Fort Campbell, KY (N = 429, 87% enlisted, 82% male, 26±7y/o) completed questionnaires on health-related behaviors (e.g., sleep duration and quality, physical activity habits, nutrition behaviors and knowledge), injury, and resilience.

Results: Six-months post H2F implementation, Soldiers in the unit with H2F personnel had significantly higher scores on a nutrition knowledge assessment (41±9 vs 33±13, p < 0.001), lower current injury (23% vs 38%, p = 0.01), but also lower resilience scores (67±20 vs 73±16, p = 0.01) than Soldiers in the unit without H2F personnel. No other significant differences in the health related behaviors between the two units were observed.

Conclusion: Differences in nutrition knowledge and injury prevalence between the two units points towards a positive effect of the H2F system, however the remaining two iterations of data collection will allow for a more thorough examination of changes in the health-related behaviors of Soldiers.

Funding source: US Army Medical Research and Development Command

Disclaimer: Authors’ views do not reflect official DoD or Army policy

Exploring Relationships of Disordered Eating and Body Dissatisfaction with Lean Versus Non-Lean Athletes

Author(s): V. Fitts, K. Eck; C. Byrd-Bredbenner, V. Quick; Rutgers, The State University of New Jersey, Marywood University

Learning Outcome: Upon completion, participants will be able to identify common disordered eating behaviors present among athlete sport classification (e.g., lean vs. non-lean types) groups of college men and women.

Background: Prior literature has found disordered eating patterns to be prevalent in both girls and young adult women as well as athletes. However, few studies have comprehensively examined disordered eating behaviors by athlete classification (e.g., lean vs. non-lean athlete) among men and women college students.

Methods: Participants (N = 1,279) aged 18-25 years old from a U.S. northeastern university completed a cross-sectional, online survey with valid and reliable instruments (e.g., Eating Disorder Examination Questionnaire) that assessed disordered eating behaviors and self-reported height and weight. Athletes were classified into non-lean, lean, and mixed athlete groups based on their sport participation and stratified by gender (men—498, women—781). Analysis of variance (ANOVA) with Tukey post-hoc follow-up tests examined disordered eating behavior differences among and between athlete classification groups by gender.

Results: Women had lower body satisfaction and higher shape, weight, and eating concerns compared to men. ANOVA revealed that lean athletes had significantly lower BMI compared to non-lean and mixed athletes in both men and women. However, there was no significant mean body shape satisfaction, eating, shape and weight concern score differences among athlete classification groups. In women only, the mixed athlete group had significantly greater eating restraint compared to non-lean and lean athletes, but this association became non-significant after controlling for BMI.

Conclusion: While women had higher disordered eating risk scores compared to men, there were little disordered eating behavior differences among and between athlete classification groups. Future research is warranted in larger samples sizes of athletes from varying sports to confirm our cross-sectional findings.

Funding source: New Jersey Agricultural Experiment Station
Farmhouse Fumes: Assessing College Students’ Knowledge of Sustainable Protein Sources

Author(s): J. Campbell, J. Van Wie, A. Lopez, M. Vines, P. Policastro

Institution: Rutgers University, Rutgers University Dining Services, Rutgers University - New Jersey Healthy Kids Initiative

Learning Outcome: Upon completion, participant will be able to identify the level of greenhouse gas emissions associated with the production of several protein sources.

Background: Producing protein-sources, particularly meat and dairy, creates greenhouse gas emissions (GHGE), which negatively impact the environment. Knowledge of protein-sources and associated GHGE is important to shift dietary choices towards sustainable protein-sources and reduce global GHGE.

Objective: Analyze college students’ ability to categorize six protein-sources (soy, legumes/chickpeas/beans, fish, dairy, poultry, and beef) as having low/medium/high GHGE.

Methods: A six-food item (soy, legumes/chickpeas/beans, fish, dairy, poultry, and beef) by three-category (Low/Medium/High) design study. Students categorized each protein-source as Low/Medium/High GHGE. Responses were recorded as correct/incorrect.

Participants/Setting: Research participants were a convenient, random sample of college students in campus dining halls over a three-day period (N = 149). Students were further categorized into first years (n = 73) and upperclassmen (2 years in college, n = 76) to evenly distribute the data across school year.

Main Outcome Measure: Student’s ability to correctly categorize protein-sources as Low/Medium/High GHGE.

Analysis: Frequencies examined the percentage of students who accurately matched each protein-source to its respective GHGE category. Chi-square was calculated testing for a relationship between school year and correct/incorrect response for each protein-source.

Results: Legumes/chickpeas/beans had the highest percentage of correct responses (99%), while fish (75%) and dairy (70%) had the lowest. Chi-square analysis showed a significant effect (p < .05) of school year on responses for beef (X^2(1, 149) = 4.98, p = .026) and dairy (X^2(1, 149) = 8.25, p = .004). First years were more likely than upperclassmen to answer correctly for beef and dairy.

Conclusion and Implications: Education is recommended regarding GHGE associated with fish and dairy, as well as beef and dairy for upperclassmen. Future studies assessing knowledge of GHGE and food choice behavior are warranted.

Funding source: None

Food Fun Facts Lead to Increased Acceptance of New Menu Items in a Childcare Center

Author(s): G. Guthrie, C. Jindrich, R. Seidu, J. Hanson; Kansas State University

Learning Outcome: Upon completion, participants will be able to describe how fun facts impacted new food acceptance among children attending a childcare center.

Background: Childhood is a time when healthy habits can be created, but it is also a time when picky eating or unwillingness to try new foods can be a challenge. Exposure to new foods plays an important role in acceptance, and childcare centers have a unique opportunity to provide children with new foods experiences.

Objective: To test the effectiveness of using exposure in the form of food fun facts to increase acceptance of new menu items among children attending a childcare center.

Methods: Fun facts were created to accompany two new childcare center menu items. A randomized crossover design was used to assign eight childcare classrooms to either receive pre-meal fun facts or not. Forty-four children were enrolled in the study, and each new menu item was served four times yielding a total of eight observation days. Researchers recorded whether or not the new food was tried during each individual meal observed (N = 289).

Analysis: Chi squared analysis was used to compare the rate of food trying between observations that were preceded by the fun facts and those that were not.

Results: The rate of food trying was higher (p = .015) among observations preceded by the fun facts (74.4%) compared to the observations that were not preceded by the fun facts (60.8%).

Conclusion: Presenting fun facts before introducing news foods led to a higher rate of trying the foods. This finding suggests that fun facts may be a relatively easy and low-cost way of improving new food acceptance.

Funding source: None

Food Purchasing and Preparation Practices, Food Access, and WIC Food Redemption Patterns of WIC-Enrolled Pregnant Women

Author(s): A. Rojhani, P. Ouyang; Western Michigan University

Learning Outcome: Upon completion, participant will be able to describe the food purchasing and preparation practices, extent of access to healthy foods, and WIC food redemption patterns of WIC-enrolled pregnant women.

Background: Few studies have reported on the food purchasing and preparation practices, access, and the WIC food redemption rates of WIC-enrolled pregnant women in southwest Michigan.

Methods: Sixty pregnant women between 12 and 24 weeks of gestation were recruited from a large WIC program in southwest Michigan. The self-reported questionnaire assessed socio-demographic characteristics, food purchasing and preparation practices, food access, and redemption rates of WIC foods. Redemption data were compared to the data reported for Michigan and national WIC. Descriptive and inferential statistics were used to analyze the data.

Results: Majority of participants did most of the grocery shopping and food preparation. Fifty-eight percent shopped mainly at regular chain grocery stores, while 30% shopped at both regular and discount grocery stores. Only 65% reported owning their own car with 28% utilizing the bus, walking, or getting rides for shopping. Twenty percent limited grocery shopping to nearby stores due to lack of transportation. The redemption rates for majority of WIC foods were above 90%. A significantly higher percentage of participants reported redeeming their full allowance of breakfast cereals and whole wheat breads when compared to the Michigan and national data. The exceptions were dry beans (50%), canned beans (55%), oatmeal (63%), and brown rice (50%).

Conclusion: Future studies should examine barriers to redemption of foods not currently fully utilized.

Funding source: This research was funded by the Eulalia Toms Faculty Research Fund of the Department of Family and Consumer Sciences at Western Michigan University.
Fruit and Vegetable Intakes Are Up, But Not Significantly, In College-Aged Young Adults During The COVID-19 Pandemic

Author(s): K. Parker, K. Honrath, Y. Rhee; North Dakota State University

Learning Outcome: Upon completion, participants will be able to identify the need for continued encouragement and strategies for fruit and vegetable consumption in young adults.

Background: Fruit and vegetable intake is lower than recommended by the Dietary Guidelines for Americans across the population. Nutrition studies during the COVID-19 pandemic suggest that eating habits may have changed. This study examined whether the fruit and vegetable intake of young adults, aged 18 to 35, changed from year 1 to year 2 of the pandemic.

Methods: College-aged young adults were recruited via email listserve, and fruit and vegetable intakes were measured using a food-frequency questionnaire in Spring 2020 (n = 185) and Fall 2021 (n = 128). Average daily fruit and vegetable intakes were calculated using standard serving sizes. Independent samples t-test measured the difference in average daily fruit and vegetable consumption between years.

Results: Students in both years reported consuming less than the recommended 5 to 9 servings of fruits and vegetables daily. The average daily fruit intake increased slightly from 1.28 (SD = 1.60) to 1.45 (SD = 1.78) servings (p = 0.35). The average daily vegetable intake improved marginally from 1.80 (SD = 1.45) to 1.99 (SD = 1.99) servings (p = 0.33). However, these increases were non-significant.

Conclusion: The COVID-19 pandemic may have contributed to a slight increase in fruit and vegetable intake in college-aged young adults. Even so, because intake is still lower than recommended, more education is needed in this age group to encourage fruit and vegetable consumption. Including preparation methods may be a useful strategy for encouraging intake.

Funding source: None

Improving Dietary Patterns to Combat Malnutrition in Rural Rwanda Using Small-Scale Nutrition-Sensitive Agriculture: A Mixed-Methods Community Level Study

Author: B. Sly; Colorado State University

Learning Outcome: Describe how collaborative community-based nutrition-sensitive agricultural interventions have the potential to increase household diet diversity, which may encourage sustained change in dietary patterns for nutritional adequacy.

Background: In Rwanda, rates of malnutrition have stagnated, particularly in rural areas where most residents engage in agriculture for income and subsistence farming, resulting in a primarily starch-based low variety diet. Nutrition-sensitive agricultural interventions using kitchen gardens, have been effective in addressing low diet diversity in similar populations.

Methods: The objective of this study was to develop and evaluate a kitchen garden and nutrition education intervention aimed at sustainably increasing diet diversity and food security at the household-level. A community-level study that included a sixteen-week nutrition-sensitive agricultural intervention was conducted in a rural Rwandan community. Stratified purposeful sampling techniques were used to select participants in collaboration with the community. Household diet diversity scores and household hunger scores were calculated at baseline, post-intervention and at a one-year follow-up.

Results: Household diet diversity scores increased over time from pre-intervention (x̄ = 4.85 [1.6]) to six months post-intervention (x̄ = 5.55 [1.3]) showing consistent increases over time. The magnitude of the change was similar in all stratified groups. There were no significant changes in household hunger scores.

Conclusions: Collaborative community-based nutrition-sensitive agricultural interventions in rural poor Rwandan populations can increase household diet diversity, which may encourage sustained change in dietary patterns for nutritional adequacy. Using kitchen gardens as the conduit for change, households can increase their consumption of home-grown vegetables, as well as other nutrient-dense foods. More research concerning the systems that affect food availability and agricultural markets is needed to better understand approaches to enhance food security.

Funding source: Private funding through Rotary International
Nutrition Interventions Are Needed for Dementia Informal Caregivers

Author(s): C. Labyak, A. Alotaya, A. Waterman, L. Wright, C. Sealey-Potts; University of North Florida

Learning Outcome: Upon completion of the presentation, participants will be able to describe barriers to achieving adequate nutrition status and diet quality of caregivers of dementia individuals.

Background: Dementia caregiver’s face increasingly higher demands following nutritional and functional decline of individuals with dementia. Historically, research has focused on non-community dwelling individuals with dementia and there is a lack of studies about the caregiver. This study investigated the impact on nutritional health of being a caregiver to an individual with dementia.

Methods: A mixed method approach was used to evaluate caregivers of dementia patients (n = 28). Established protocols for administering focus groups and food frequency questionnaires (FFQ) were used in data collection. The protocol was approved by the University’s Institutional Review Board and IBM-SPSS statistics version 27 was used for dietary analyses. Trained assistants were used in reading and coding of transcripts in the thematic analysis of the focus group data.

Results: Emerging themes from focus groups showed that the nutritional status of caregiver’s was impacted by exhaustion, depression, stress, and inability to prioritize self. The scores from FFQ data showed that caregivers tended to have lower dietary quality than the MIND diet recommendations. Compared to the MIND diet, most (>=60%) participants did not consume a variety of food groups.

Conclusion: Caregivers are prone to malnutrition and this research shows that participants were less likely to obtain adequate nutrition status for health. Findings support the need for Registered Dietitians to be engaged in tailored nutrition interventions for caregivers of dementia individuals.

Funding source: Brooks College of Health Dean’s Research Professorship, University of North Florida

Nutrition-Related Knowledge Is Needed Among Community-Dwelling Traumatic Brain Injury Survivors and their Caregivers: A Focus Group Study

Author: P. Thaitrong; Department of Human Nutrition & Hospitality Management, The University of Alabama

Learning Outcome: Registered Dietitian Nutritionists need to provide nutritional information and resources to help caregivers identify strategies for improving nutritional care for their love one with traumatic brain injury.

Background: Traumatic brain injury (TBI) is a leading cause of disability in the United States. Caregivers of TBI survivors often have limited resources and experience substantial caregiver burden. Because little is known about the nutrition-related needs of caregivers of TBI survivors, the purpose of this study was to describe nutrition-related knowledge gaps in this population.

Methodology: Caregivers of TBI survivors in Alabama (n = 11) were recruited to participate in one of three focus groups, where they described their needs as caregivers. Sessions were led by a moderator using a semi-structured interview guide, transcribed verbatim, and audited by the research team for accuracy. Transcripts underwent thematic analyses using NVivo® software.

Results: Thematic analysis revealed nutrition-related knowledge needs among caregivers, specifically related to weight management, healthy eating and meal planning. Some families had received nutrition education from a Registered Dietitian Nutritionist and reported that their loved ones’ food choices improved as a result. Other caregivers reported that they need more nutrition-related guidance to adequately care for themselves and their loved one with TBI. Moreover, participants reported difficulty in following therapeutic diets for chronic conditions.

Conclusion: Caregivers described nutrition-related knowledge needs in caring for their loved one with TBI. It is important for Registered Dietitian Nutritionists to provide nutritional information and resources to help caregivers identify strategies for improving nutritional care for their love one with TBI. More research is needed to identify opportunities to provide food and nutrition knowledge and resources to TBI survivors and their caregivers.

Funding source: The authors have no funding sources to disclose for this research.

Pediatric Fresh Produce Prescriptions: Food Security and Caregiver Experiences Following Three Years of Program Exposure

Author(s): A. Saxe-Custack, S. Egan, B. Farmer; Michigan State University

Learning Outcome: Describe the impact of a pediatric produce prescription program on household food security

Background: A Flint, Michigan, pediatric clinic introduced fresh produce prescriptions to patients (0–18 years) in 2018, providing one $15 prescription at each office visit. Prescriptions (valid for 90 days) were ordered via electronic medical records, printed on prescription paper, and redeemable for fresh produce at a downtown farmers’ market or local mobile market. This study measured program impact on food security and identified caregiver-reported program experiences.

Methods: A consecutive sample of caregiver-child dyads (one/household) enrolled in the study. Dyads completed separate baseline surveys that included the Six-Item Food Security Survey Module (caregiver) and Self-Administered Food Security Survey Module for Youth (child) at 12 years. Identical follow-up surveys, completed approximately three years later, included questions about program experiences. Mean baseline and follow-up food security scores were compared using paired samples t-tests.

Results: Overall, 112 dyads completed three-year follow-up assessments. Most children (mean age 14.92 ± 4.60 years) were African American (64%), Flint residents (72%), and female (53%). Most caregivers (mean age 41.50 ± 8.46 years) were African American (62%), Flint residents (72%), and female (98%). Caregiver-reported household food security (p < 0.001) and child-reported food security (p = 0.002) improved. Most caregivers (80%) reported that their entire household consumed produce purchased with prescriptions. Redemption challenges included lost/expired prescriptions; limited redemption sites; and transportation. Caregiver suggestions included expanding to grocery stores; providing culinary education; utilizing digital/electronic prescriptions; and eliminating expiration dates.

Conclusions: Results suggest pediatric produce prescriptions may be effective in addressing food insecurity. Caregiver feedback provides important insights into family experiences.

Funding source: Michigan Health Endowment Fund

Perceived Stress Levels and Eating Habits of College Students at a West Texas University

Author(s): T. Ibiyemi, P. Andrews, W. Oldewage-Theron; Texas Tech University

Learning Outcome: Describe the association between stress and eating habits among college students and identify college population groups susceptible to increased stress and unhealthy eating behaviors.

Background: College presents many lifestyle changes which predispose college students to increased stress and unhealthy eating behaviors. With the ongoing COVID-19 pandemic’s impact on stress, this study objective was to assess college students’ stress levels and examine the relationship between perceived stress and eating behaviors.

Methods: An online survey was administered to 331 undergraduate and graduate students at the chosen university from September 2021-November 2021. Perceived Stress Scale (PSS) assessed the stress levels while eating behaviors were assessed using adapted questions from previously validated questionnaires. Independent t-tests and Kruskal Wallis H tests were done to observe the statistical difference in demographic factors and Pearson’s correlation with posthoc tests to examine bivariate relationships.

Results: Overall, 65% of students experienced moderate stress, and 19% experienced high-stress levels. A Kruskal-Wallis test showed that PSS significantly varied among grade classification (H (6) = 16.11, p = 0.01). Sophomores and seniors had significantly higher stress levels after pairwise comparison tests were done. High PSS was negatively correlated with fruit and vegetable intake (r = -0.205, p < 0.001; and r = -0.157, p < 0.001 respectively), and positively correlated with snack intake (r = 0.218, p < 0.001), skipping breakfast (r = 0.441, p < 0.001) and dinner (r = 0.328, p < 0.001).

Conclusion: Findings indicate students face moderate to high-stress levels and suggest an association between high-stress levels and unhealthy eating behaviors in college students. Stress management strategies are essential in future nutrition interventions, especially for sophomore and senior students.

Funding source: None
Pilot Research to Assess Undergraduate Dietetic Students’ Perceptions Toward Poverty

Author(s): L. Porter, J. Kandiah, J. Jones; Ball State University

Learning Outcome: Assess undergraduate dietetic students’ (UDS) perceptions toward poverty.

Background: Social determinants of health (SDOH) have a major impact on people’s health, well-being, and quality of life. Poverty is a major SDOH. There has been limited research evaluating undergraduate dietetic students’ (UDS) perceptions toward poverty.

Methods: Sixteen UDS participated in a 3-hour life poverty simulation (LPS) that allowed students to experience interprofessional immersive learning, bringing a heightened sense of realism to the simulation. The valid and reliable Undergraduate Perception of Poverty Tracking Survey (UPPTS), a quantitative 39-item instrument with six subscales and an overall composite score, was used to assess pre to post changes in UDS perceptions toward poverty following the LPS. Qualitative analysis regarding their perception of poverty and care for individuals experiencing poverty was also gathered. Data was statistically analyzed using pair-samples t-tests for the six subscale and composite scale scores.

Results: Fifteen UDS completed both the pre and post surveys. After calculating the subscale and composite scores, the pre–Welfare Attitude (32.87) dropped 2.27 at post (30.60; t(14) = 2.31, p = .037), indicating a more positive view of Welfare Attitude. No significant changes were found for the remaining subscales (i.e., Poor are Different, Do More, Belief in Equal Opportunity, Fundamental Rights, and Lack of Resources) nor for the overall composite score. Qualitative analysis indicated students left with an appreciation of how poverty could affect an individual’s physical, mental, and emotional health and increase their need for nutrition services.

Conclusion: The LPS experience produced positive change in Welfare Attitude for UDS.

Funding source: None

Recipes for Health: A Community-Based Nutrition Intervention

Author(s): N. Mikati, G. Ruiz Barneccet, S. Lilloquist, N. Flexman; Nova Southeastern University

Learning Outcome: Upon completion, participants will be able to describe the benefits of a nutrition education and hands on cooking curriculum on dietary habits and overall wellness.

Background: Obesity is a major public health concern especially that it has been associated with an increased incidence of multiple co-morbidities. Positive eating behavior modifications learned through nutrition education sessions are the main interventions proposed to target overweight and obesity. The aim of this study was to determine if nutrition education and hands-on cooking classes will result in improvement in eating habits and cooking skills in individuals with chronic disease.

Methods: Twenty-one participants (n = 21) were recruited from primary health clinics in South Florida. A total of eight weekly virtual lessons were conducted which included a culinary and a nutrition education portion. At baseline and post-intervention, participants filled out a validated questionnaire with questions related to nutrition knowledge, behavior, and cooking skills. Weight was self-reported. Statistical analysis was conducted using SPSS and included a paired t-test to compare pre- and post-intervention data.

Results: Throughout the eight weeks, subject attendance ranged from 61-95%. Nineteen participants completed the post-intervention questionnaire (n = 19). Results showed a statistically significant mean weight loss of 3.74 ± 5.26 lbs (p < .006) and a statistically significant mean BMI change of -0.66 ± 0.86 (p = .004) at post-intervention compared to baseline. In addition, subjects reported an increased confidence in dietary habits and culinary skills post-intervention (p < 0.05).

Conclusion: Our results show exciting data in support of this project’s objectives that a healthy cooking intervention can (1) increase nutrition knowledge; (2) increase confidence in healthy food choices; (3) increase confidence in food preparation skills, and; (4) improve weight and BMI in participants.

Funding source: This study was funded by the Quality Of Life grant awarded by Nova Southeastern University. We would like to thank our community partners Baptist Health and Common Threads.

Predictors of Change in Dietary Quality of Latinx Families During The COVID-19 Pandemic

Author(s): N. Vitale, S. Jeune, A. Mujica, A. Dick, P. Graziano, C. Coccia; Florida International University

Learning Outcome: Identify factors that influence changes in Latinx children’s diet quality during the COVID-19 pandemic

Background: Previous research has indicated that times of crisis may limit resources, which can affect mental health and overall diet quality. At this time, little is known about the impact COVID-19 had on food security, parent mental health and the subsequent changes in children’s diet quality.

Objective: To examine the effects of food security and parent mental health on dietary habits and cooking skills in individuals with chronic disease.

Study Design & Participants: Families (n=74) were assessed using the Healthy Eating Index and validated questionnaires at two time points before and during the COVID-19 pandemic to assess food security, parent mental health, and child diet quality. Families were predominantly Hispanic (83.6%), children between 5-10 years old.

Statistical Analysis: Descriptive statistics and correlations were conducted using SPSS V26.0. Results were considered significant at p < 0.05.

Results: During the pandemic, higher food insecurity was correlated with increased parental depression (r = .319, p = .024), parental stress (r = .361, p = .010), and higher child added sugar intake (r = .425, p = .010). Additionally, increased parental stress was associated with higher child intake of fat (r = .326, p = .049) and added sugar (r = .400, p = .013), and lower intake of refined grains (r = -.415, p = .010).

Conclusions: Parental mental health during COVID-19 significantly predicted changes in the quality of children’s food intake. Furthermore, food security impacted parental stress and depression during the pandemic. More research is needed to assess long term effects of food security and parental mental health on children’s dietary quality.

Funding source: Funding Source: This project was supported by the FLU Center for Research on U.S. Latino HIV/AIDS and Drug Abuse Supplemental Pilot Program and National Institute of Health Grant #R01DK119814.

Testing and Validation of the Prenatal Rating of Efficacy in Preparation to Breastfeed Scale in a Postpartum Sample during the COVID-19 Pandemic

Author(s): E. McKinley, K. Nirola; Louisiana State University

Learning Outcome: Describe the similarities of the PREP to BF score from prenatal to postpartum periods in a sample who gave birth during the height of the COVID-19 pandemic.

Background: The PREP to BF Scale is a valid measure of prenatal breastfeeding self-efficacy and has yet to be tested in a postpartum sample to assess changes in self-efficacy after birth. The COVID-19 pandemic may have affected breastfeeding self-efficacy for those giving birth in 2020-2021.

Methods: Participants (n = 168) were recruited via online advertisements to take a 78-item survey. At 6-weeks postpartum, they completed a follow-up survey to assess the same variables related to breastfeeding self-efficacy and infant feeding method initiated at birth. The valid PREP to BF Scale was tested using the postpartum data.

Results: Participants having a high prenatal breastfeeding self-efficacy score during pregnancy (mean = 310.77 ± 55.63) was maintained at 6-weeks postpartum (mean = 305.78 ± 62.29). The PREP to BF Scale maintained a strong Cronbach’s α = .954 at 6-weeks postpartum (prenatal Cronbach’s α = .960) in participants indicating the ability to measure breastfeeding self-efficacy accurately in both periods. PREP to BF score was highly and significantly correlated with the planning and inclusion of breastmilk at the prenatal (r = .004) and postpartum (r = .001) measurements. Over 97% intended to include breastmilk in the infant feeding plan and 95.8% were exclusive or combination feeding with breastmilk at 6-weeks postpartum.

Conclusion: Pregnant persons with strong breastfeeding intentions and high self-efficacy were able to maintain their feeding plan and confidence regardless of the pandemic. The PREP to BF Scale remains a valid measure of prenatal breastfeeding self-efficacy and may be used to measure self-efficacy in the postpartum period.

Funding source: National Institute of Food and Agriculture, US Department of Agriculture, Hatch project LAB94426.
The Relationship between Food Pantry Donations and Nutritional Density of Food Selection
Author(s): G. McGrath, C. Anstrom; Olivet Nazarene University

Learning Outcome: To increase awareness of the nutrient density of food selection provided by local food pantries through purchase and donation.

Introduction: Wright et al. (2020) noted a recent shift of the need from short-term food assistance to long-term food assistance. There are concerns that food selection at the food pantries are not meeting client nutrient needs. The goal of this current study is to bring awareness to the nutritional adequacy of food donations accepted at local food pantries. To accomplish this food pantry managers need to be aware of the nutritional content of food donations for both short and long-term assistance.

Methods: A qualitative design was used. Data was collected by conducting interviews (n=7) with food pantry managers over the course of a month. Questions adapted from Barone et al. (2020). Interviews took 30-60 minutes. Data was transcribed, coded, and analyzed using Thematic Analysis.

Results: Interview coded responses indicated thematically that there is a difference between food purchased vs. donated at the food pantry in terms of nutrient density. Food purchased from the food bank or donated from major grocery chains were nutritionally dense. Food from church donations varied in nutritional density. Food pantry clients prefer food they are familiar with or using as an ingredient or as a meal component.

Implications: More research is needed to investigate the nutrient density of food selection at food pantries. RDs can provide education concerning the nutrition density of foods to managers and clients. Education could include recipes and packaging pantry items together to make meal preparation convenient. Even with the availability of nutrient dense foods, clientele still may not select healthful foods.

Funding source: None

The Transgenerational Effects of a Western vs. High Fiber Traditional Diet on Health Outcomes in Mice Offspring
Author(s): E. Herzl, E. Schmitt, G. Shearrer, J. Keith; University of Wyoming

Learning Outcome: Participants will be able to describe the impact of maternal and early life Western versus High Fiber Traditional dietary components on health outcomes in mice offspring.

Background: Diet influences critical periods of growth, including gestation and early development. We hypothesized that a maternal/early life diet reflecting traditional dietary components (prior to the transition to a Westernized diet) would positively affect offspring metabolic and anthropometric parameters.

Methods: Using 9 C57BL-6 dams, we simulated exposure to a Western diet (low fiber, high saturated fat [anhydrous milk fat], high sugar), a High Fiber Traditional (HFT) diet (high fiber [cellulose], low sugar, low saturated fat), or a Control diet. Once split into diet groups (Western [n=3], HFT [n=3] and Control [n=3]), dams consumed their respective diets through 3 weeks of pregnancy and 3 weeks of weaning; offspring consumed the diet of their mother for 4.5 weeks post-weaning. Measurements included DXA scans (lean mass), feed consumption and body weight, blood glucose measures (glucometer), and ELISA assays for insulin and HbA1c in offspring. All statistical analyses were performed using one-way ANOVA with Tukey post-hoc analysis of dependent variables (glucose, insulin, lean body mass change, body weight) in relation to diet group.

Results: Offspring DXA measures at 5 and 7.5 weeks post-partum revealed higher lean body mass development in HFT and Control diet offspring compared to Western offspring. Analysis indicated blood glucose (p<0.001) and HbA1c concentrations (p=0.002) were lower among HFT offspring compared to Western and Control offspring, though Control offspring had the lowest insulin concentrations.

Conclusion: Results demonstrate that nutritional intake during gestation and early life consistent with traditional diet patterns may influence hyperglycemia and adiposity in offspring.

Funding source: Funding support was provided by the Department of Family & Consumer Sciences at the University of Wyoming.

U.S. Mothers’ and Chinese Caregivers: Differences in Child Weight Concerns, Child Feeding Practices, and Child Eating Behaviors
Author(s): T. Rielly, C. Delaney, C. Byrd-Bredbenner; Rutgers, The State University of New Jersey

Learning Outcome: Describe how U.S. mothers and Chinese caregivers differ in their concern about child weight, feeding practices of young children (ages 3 to 6 years), and perceptions of children’s eating behaviors.

Little is known about cross-cultural differences in child feeding practices and child eating behaviors. Thus, this study compared U.S. mothers’ (n=412) self-reported child feeding practices and perceptions of their children’s eating behaviors with published data of caregivers (n=768) of young children (3-6 years) residing in China. Two-tailed independent Student’s t-tests were used to compare responses of the two groups to analogous 5-point, valid, reliable scales. China caregivers had significantly (p<0.05) more concern about children’s weight (2.17±0.93SD vs 1.91±1.05SD) and used pressure (3.59±0.82SD vs 2.19±0.97SD) and controlling child feeding behaviors (3.79±0.65SD vs 3.68±0.89SD) significantly more than U.S. mothers. China caregivers reported their children exhibited significantly less frequent food neophobic eating behaviors and (2.58±0.54SD vs 3.19±1.08SD) and eating self-regulation behaviors (2.43±0.65SD vs 3.50±1.01SD) than U.S. counterparts. Emotional eating scores of China children were significantly higher than U.S. children (2.03±0.79SD vs 1.74±0.82SD). Literature suggests BMI status may affect mother and caregiver responses; thus, ANOVA and Tukey post-hoc comparisons of scales by child BMI percentile category (underweight, healthy weight, overweight, obese) were conducted. Among U.S. mothers, child feeding practices and child eating behaviors did not differ by child BMI category. Comparisons suggest China caregivers exerted significantly less control over child eating and children had greater eating self-regulation behaviors, food neophobic behaviors, and emotional eating as child BMI category increased. Future research should investigate why the groups differed. These findings can inform the development of nutrition education interventions culturally tailored to Chinese immigrant populations to the United States.

Funding source: United States Department of Agriculture, National Institute of Food and Agriculture grant numbers 2011-68001-30170 and 2017-68001-26351

Virtual Nutrition Education Services During Covid-19 For Food Bank Clients in Rural Western North Carolina
Author(s): B. Mohn, J. Mutschall’, D. Nunnery’, S. Isaacs’; Appalachian State University, 1Baylor College of Health Sciences, Appalachian State University

Learning Outcome: Upon completion, participants will be able to determine the effectiveness of four virtual education programs for clients with insight of which learning tools better reach audiences with assorted access barriers.

Background: The Hunger and Health Coalition, a food bank located in Watauga County, NC, served on average 2,504 clients monthly through a modified drive thru service between April 2020 and March 2021. The purpose of this research was to offer several forms of virtual nutrition education to food bank clients during the Covid-19 pandemic and identify the effectiveness of each.

Methods: Nutrition initiatives included 1) weekly text messages, 2) individual nutrition counseling via phone, 3) medically-tailored food boxes, and 4) virtual nutrition education, and were offered between June 2020 and February 2021. Outcomes included participation rates, client surveys, observational field notes, acceptance, feasibility, and overall effectiveness of each virtual education format. Data were analyzed using descriptive statistics and qualitative comparative analysis.

Results: Text messaging was the most feasible form of nutrition education, with a reach of 1,856 clients. Fifty-five clients expressed interest in individual nutrition counseling; 15 of those requested continued contact for information and support. Clients appreciated the personal connection and ability to voice preferences for medically-tailored food boxes, and were offered between June 2020 and February 2021. Outcomes included participation rates, client surveys, observational field notes, acceptance, feasibility, and overall effectiveness of each virtual education format. Data were analyzed using descriptive statistics and qualitative comparative analysis.

Conclusion: Overall, it is important to meet clients where they are in regards to resources, needs and timing for nutrition services. While text messages and recorded educational videos were the easiest resources to access, client contact was highly beneficial for individualizing food boxes that meet nutrition therapy needs.

Funding source: Blue Cross Blue Shield Foundation Community Centered Health Grant provided to the Hunger and Health Coalition of Boone, NC
Vitamin D and the Food Supply: Fortification in Yogurt Products

Author: S. Obaid; Seton Hill University

Learning Outcome: Upon completion, participant will be able to analyze the current state of vitamin D fortification in yogurt products to provide accurate nutrition recommendations for the public.

Background: Recent Dietary Guidelines for Americans (DGA) consider vitamin D to be a nutrient of public health concern since low intakes are associated with health issues. The DGA estimates more than 90% of adults don’t meet daily recommendations. Consequently, dietary sources of vitamin D, both naturally occurring and fortified, are crucial for reaching and maintaining adequate vitamin D status.

Methods: The following steps were completed to assess vitamin D fortification in yogurt products: (1) Fifteen milk and plant-based yogurt brands were analyzed using online nutrition information, and (2) Questionnaires were developed using Qualtrics and distributed to yogurt manufacturers regarding fortification practices/opinions. Purposive sampling identified individuals from eight major brands to receive the survey. Project goal was to examine the prevalence of vitamin D fortification in yogurt products and company opinions on fortification.

Results: A total of 549 yogurt products were reviewed. With regard to the percent Daily Value, 33% were a good source of vitamin D, whereas only 2% were an excellent source. Sixty-two percent of plant-based yogurts were fortified with vitamin D, versus 42% of milk-based. Eight questionnaires were distributed and two were returned (25%). Although survey responses were low, there was 100% agreement that increasing fortification in products would benefit public health.

Conclusion: There may be a public misperception regarding the degree of vitamin D fortification in yogurt products. Registered Dietitians must be knowledgeable about the differences in vitamin D content to disseminate this information during counseling to increase public awareness and impact vitamin D status.

Funding source: None

“We Had More Food Than We Usually Do”: COVID-19 and Food Access in Eastern Kentucky

Author(s): A. Koempel, D. Brewer; University of Kentucky

Learning Outcome: Upon completion, participants will be able to describe the role of food aid to mitigating food insecurity during the COVID-19 pandemic in eastern Kentucky.

Due to the Covid-19 pandemic, United States food and economic systems experienced multiple disruptions in 2020, including limited availability of groceries, increases in prices of staple foods such as meat, and largescale unemployment. This was particularly devastating to low-income and rural populations. This study sought to understand the impact of the Covid-19 pandemic on food access in a rural Appalachian community in eastern Kentucky.

In September 2020 an online survey asking questions about food security and changes in food procurement before and during the COVID-19 pandemic was distributed to forty participants of a fruit and vegetable walking program. Questions were modified from the University of Chicago Covid Impact Survey.

In-depth semi-structured interviews (n=32) assessed food procurement before and during the pandemic. Interview data was analyzed utilizing NVivo.

Approximately one in five (23%) survey participants received more free meals during the pandemic than before. Since COVID-19, fewer participants set a budget for food and over 90% had enough food to eat. Less than 8% of participants reported experiencing hunger due to a lack of money to purchase food. Interview participants reported a range of food aid programs targeting families with children that delivered boxes of food to a community center or their homes.

This study found that hunger and food insecurity were mitigated during COVID-19 due to public and private food aid programs directed at families with children in response to COVID-19. Interviews suggest that the increased food aid is needed to continue mitigating food insecurity and hunger post-pandemic.

Funding source: None
The Low FODMAP Diet for Irritable Bowel Syndrome

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