TITLE: PATIENT-DRIVEN, NUTRITION EDUCATION PROGRAM FOR ADULTS WITH TYPE II DIABETES AMONG A SMALL GREAT BASIN TRIBE
AUTHORS: Cynthia Wilson, MS; Lillian Tom-Orme, Ph.D., MPH, RN, FAAN; Julie Melos, PhD., RN
LEARNING OUTCOME: Participants will be able to identify the successful components of a diabetes nutrition program developed by an American Indian dietitian for an underserved Great Basin Tribe.
ABSTRACT: Background: Type 2 diabetes mellitus (T2DM) is prevalent among a small, underserved, Great Basin tribe that straddles the Utah-Nevada state line. The geographically isolated tribe faces nutritional challenges with food access and lack of health care. The purpose of this patient-driven, nutrition education program is to test the effectiveness of lesson plans delivered by an American Indian dietitian for patients with T2DM. Methods: A needs assessment was conducted through in-depth interviews with community members, and resulted in implementation of three tailored lesson plans. By deliberate choice, program administrators were of American Indian descent in hopes that the curriculum would align to cultural sensitivities and patient receptiveness. Participants were contacted using convenience sampling. Instructional materials accompanying the lesson plans included handouts, visuals, and prompts. Changes in patient awareness, attitude, knowledge and behavior were evaluated. Results: T2DM is evident among one-fourth of the adult population living on the Great Basin reservation and 20 (91%) received nutrition education. Lesson plan topics implemented were: Carbohydrate Counting (n=9), My Plate (n=6), and Healthy Cooking (n=5). Based on evaluations, 75% of participants’ stated increased nutrition knowledge, 75% felt confident to practice what they learned, 80% found the lesson very helpful, and 100% agreed the instructor delivered a culturally appropriate lesson. Conclusions: Overall, this program influenced changes in patient awareness, attitude, knowledge and behavior regardless of gender in this population. The results of this study support the important role that lifestyle habits have on various health markers.

TITLE: DOES PHYSICAL DISABILITY IMPACT GROCERY SHOPPING FREQUENCY OR LOCATION IN UTAH SNAP RECIPIENTS?
AUTHOR: Chelsea Feller, BS May 2017, Carrie Dunward PhD, RD Utah State University (Logan, UT)
LEARNING OUTCOME: Participant will be able to determine if disability is a factor in location and how often individual shops for groceries.
ABSTRACT: Purpose: Previous research shows individuals with physical limitations shop for food less frequently. Anecdotal evidence suggests that going to the farmers market (FM) may be difficult for this population. This study examined the relationship between disability and grocery shopping habits, including shopping location and frequency.
Methods: Supplemental Nutrition Assistance Program recipients were surveyed about their shopping behaviors over the telephone during 2016 summer. Two questions from Behavioral Risk Factor Surveillance System Questionnaire were used to identify potential disability. They asked participant to self-report difficulty walking or climbing stairs (DWCS) and difficulty doing errands (DE). Descriptive statistics were calculated and a Chi Square test was used to test for significant differences. Results: Participants (n=123) were mostly non-Hispanic white (81.3%) females (76.4%) with an average age of 46 ±16.1 years. There was no significant difference in FM attendance. Those who reported DWCS were just as likely to attend the FM as those with no difficulty (34.5% [n=19] vs. 29.4% [n=20], p=0.679). Similar results were seen for those with and without DE. There was also no significant difference in grocery shopping frequency between those with and without DWCS (p=0.799) and DE (p=0.600).
Conclusion: Although previous research shows individuals with physical limitations don’t shop as often and prefer specific stores, this study found no significant difference in FM attendance or shopping frequency between participants with and without physical limitations. Further, we saw no differences in the frequency of grocery shopping. More research is needed to understand the relationship between physical limitations and FM attendance.

TITLE: INFLUENCE OF LIFESTYLE HABITS AND LDS RELIGION ON METABOLIC SYNDROME PARAMETERS IN COLLEGE STUDENTS AT WEBER STATE UNIVERSITY
AUTHOR: William Soule, Heidi Jenkins, BIS, David Aguilar-Alvarez, PhD, Weber State University
LEARNING OUTCOME: Participants will understand the role that lifestyle habits and the LDS religion may have on metabolic syndrome parameters in the Weber State University student population.
ABSTRACT: Objectives: Lifestyle restrictions are present in the religion of the Church of Jesus Christ of Latter-day Saints (LDS), as described in the “Word of Wisdom,” which prohibits the “use of wine, strong drinks, tobacco, and hot drinks.” With this premise, we sought to determine if the LDS religion influenced metabolic syndrome (MetS) parameters among college students. Additionally, we sought to determine whether other lifestyle factors influenced MetS regardless of religion.
Research Methodology: We assessed MetS parameters in 160 Weber State University student participants. Additionally, a 16-question survey was utilized to determine religion and lifestyle factors. We separated men and women into subgroups to account for gender influences on MetS parameters. Results: Participants who ate out more than three times a week presented higher waist circumference, body mass index, and lower high-density lipoprotein cholesterol (HDL-C) concentration than those who ate out less frequently (p<0.05). LDS women presented a favorable MetS profile with lower triglycerides and higher HDL-C (p<0.05). MetS incidence was lower in LDS women (12%) compared to their non-LDS counterparts (23%). In men, high meat consumers presented lower HDL-C compared to low meat consumers (p<0.05). Conclusions: The LDS religion may influence parameters of MetS in women. Among the lifestyle factors measured, eating healthy seemed to have the greatest influence on MetS parameters regardless of gender in this population. The results of this study support the importance of lifestyle habits have on various health markers.

TITLE: CULINARY MEDICINE: TEACHING NUTRITION IN AN INTERPROFESSIONAL HANDS-ON SETTING
AUTHORS: Theresa Dvorak MS, RDN1, Amy Locke MD2, Ashley Pyne1, Janet Lindsey PhD1
1Department of Nutrition and Integrative Physiology, University of Utah, Salt Lake City, UT 2School of Medicine, University of Utah, Salt Lake City, UT
LEARNING OUTCOME: The participant will be able to identify benefits and outcomes of a culinary medicine course designed for medical students.
ABSTRACT: Nutrition education in medical schools is limited and frequently focuses on biochemistry metabolism. Practical knowledge on choosing patients about health as well as personal knowledge of food preparation. Culinary medicine is the utilization of a unique combination of nutrition and culinary knowledge to teach medical students about the prevention and treatment of common chronic diseases that plague our society.
A collaborative culinary medicine course was offered with the School of Medicine and the Department of Nutrition and Integrative Physiology using the Goldring Center for Culinary Medicine at Tulane University curriculum. The curriculum includes a series of hands-on cooking modules that focus on: 1) Mediterranean diet, 2) food as medicine, and 3) flavorful food with less sodium, saturated fat, and refined sugar.
Key findings from the end of course survey (n=13) include: 100% responded ‘useful’ or ‘highly useful’ to their future practice of medicine; 9/13 negatively described the didactic materials; 100% liked the cooking and/or case study discussions best. Student comments included: “I loved learning from the dietitian students and would love to get more perspectives”; “Cooking new foods... Learning how to advise people to make better choices”.
In conclusion, the Culinary Medicine course was well received by medical students. Future classes will be updated to reflect current literature, enhance the interdisciplinary learning environment, and include more hands-on counseling exercises. In order to enhance exposure to other disciplines, future offerings will be available to include students in other health related fields and eventually will be offered to community members.
SPORTS NUTRITION KNOWLEDGE IN DIVISION I UNIVERSITY ATHLETES

**AUTHORS:** Jessica Smith, Natalie Norris RD, MS, Jen Day RD, PhD, Sheryl Aguilar RD, MS, Heidi Wengreen RD, PhD; Logan, Utah

**LEARNING OUTCOME:** Participants will learn common nutrition misconceptions held by incoming college athletes.

**ABSTRACT:** Utah State University recently launched a sports nutrition program for student athletes. This program includes a fueling station where athletes receive food to aid in fueling and recovery along with nutrition education. Assessing the nutrition knowledge of incoming athletes will help USU to better meet the needs of athletes.

**Methods:** Ninety six incoming Division I University student athletes enrolled in a student athlete orientation class completed an online survey that included 20 questions on sports nutrition knowledge, 11 questions regarding their beliefs about what constitutes healthy eating and what supplements they take and their source of nutrition information.

**Analysis:** Frequency counts, analysis of variance, and Pearson’s chi-squared tests were used to examine the distribution of responses by sex, age, and team. Individual questions were coded as correct or incorrect.

**Results:** The average number correct was 6.7/20 (34%). 16 (80%) questions were answered incorrectly by >50% of athletes. The most frequently missed questions were about post-exercise recovery and the female athlete triad. 3 (15%) of questions were answered as unsure by >60% of athletes. 36.5% of athletes disagreed with the statement “all foods fit into a balanced diet.” Mean score differed by team (P = 0.034), >60% of athletes. 36.5% of athletes disagreed with the statement “all foods fit into a balanced diet.”

**Conclusions:** Incoming Division I student athletes have a low degree of nutrition knowledge. Providing athletes with nutrition education that targets common misconceptions may help to improve dietary choices which could impact athletic performance.

FEASIBILITY OF DIAGNOSING MALNUTRITION IN A BURN CENTER

**AUTHORS:** Caran Graves, MS, RD, CNSD, Stephen Morris, MD, FACS, FCCM

**LEARNING OUTCOME:** Clinicians will be able to describe limitations and options in performing a Nutrition Focused Physical Exam in a critically ill population.

**ABSTRACT:** Malnutrition is common in hospitalized patients and accurate diagnosis can improve outcomes. Dietitians can perform physical assessments to evaluate nutritional status but burn injuries/wounds may limit access and make hands-on evaluation difficult. This project sought to determine if the malnutrition diagnosis using published criteria was feasible and what barriers, if any, might be present. **Methods:** Adult patients admitted to the burn intensive care unit from May through August 2016 were evaluated to determine access to head, torso, upper and lower extremities, edema assessment and patient’s ability to provide weight and intake history. If a physical assessment could not be performed, the reasons were recorded. Data are reported as totals and percent of data available. **Results:** We admitted 92 patients (76% male) for burns (73%), necrotizing soft tissue infections (14%), other wounds (7%) and toxic epidermal necrolysis (4%). Patients/family could provide weight and diet history 83% of the time. All physical assessment parameters were available in only 26% of patients. Head, torso, upper and lower extremities were most accessible. Wounds, IVs and ventilators often limited access to muscle or fat evaluations. **Conclusions:** Assessing nutritional status using patient history and physical status is feasible in critically ill patients. Completing nutrition-focused physical exam may be difficult due to wounds (87%) and lines (21%) but these limitations do not preclude diagnosing malnutrition.

**Applicability to Practice:** Malnutrition evaluation including physical examination is possible in critically ill patients using current diagnostic criteria. This information may assist in providing appropriate nutritional interventions.

EXPLORATORY STUDY OF ORAL INTAKES: DISCREPANCIES IN MEASURING PERCENT EATEN

**AUTHORS:** Mikeala Call, BS, Laura Bernasconi, MS, RD, CD West Valley City, UT

**LEARNING OUTCOME:** The importance of staff education regarding appropriate recording of oral intakes for patient nutrition.

**ABSTRACT:** Improper reports of the amounts of food eaten and recorded is a major concern. Accurate intake records allow dietitians to understand possible reasons for weight loss, decreased nutrients, and necessary or unnecessary supplementation. I measured the amount of food individuals eat and compared it to what was being recorded. I found that the staff made many estimates based on the previous meal intake. I found that the majority of intakes have been overestimated, and rarely underestimated. Recording errors can lead to patients being under or over supplemented, unexplained weight loss or gain, or obtaining improper nutrition that they need to heal. Staff members reported learning oral intake documentation procedure when they were first hired at the facility, with no further education or training received. Staffing reports it takes no more than three to five seconds to estimate and record the reported intakes. We have conducted an in-service training with the staff to re-educate on the importance and proper procedure for recording accurate oral intakes of individuals to reduce errors in patient nutrition.
Results: As total health score, diet score, and physical activity score valuable biomarker of total health. Further research is warranted.

Significant correlation (r=0.31, p=0.001).

Sub-score, and total physical activity sub-score with scanner level.

To examine associations of quartiles of the total health score, total diet associations of scanner level and total health score. ANOVA was used skin carotenoid levels for each individual. Pearson correlation examined Impedance Scale. The BioPhotonic S3 scanner was used to measure BMI calculated, and body fat measured using the Omron Bio-

Spirituality, and beliefs. Each person had weight and height measured, social and environmental wellness, emotional awareness, mental health. Categories included physical activity, nutrition, general health, safety, and chronic diseases. Concentration of skin carotenoids is correlated with fruit and vegetable intake in adults.

Purpose: The purpose of this study was to examine the associations between a composite indicator of overall health and levels of skin carotenoids among participants of the Utah State University Wellness Expo in January, 2017.

Methods: Adult volunteers (n=167) attending the Expo completed an electronic survey with 50 questions about their overall health. Participants (N=167) were recruited from general education courses and asked to complete a baseline survey containing a FV screener from the National Cancer Institute. They were then randomized to receive one of four messages one week after the initial survey and asked to immediately to fill out the same FV screener. The Control group received no FV message. The Recommendation group received a message that the recommendation for FV is 4-5 cups per day. The normative groups received the recommendation and also received a message that they were either lower or higher than their peers, regardless of actual intake. For example the Low Intake message stated, “You are the in the 20th percentile of USU students. This means 80% of USU students eat more FV than you do.”

Analysis: Total FV intake and perception of peers FV intake were measured at baseline and again in one week, using repeated measures ANOVA.

Results and Conclusions: Those receiving the message that they were in the lowest 20th percentile of intake reported a significant half-cup increase in self-reported FV intake and a one-cup increase in perception of peers’ intake (p=0.037 and p=.001, respectively). These results indicate that normative messaging may influence self-reported FV intake of college students when this message informs the participant that they are in the lowest percentile of their peers.

**ABSTRACT:**

**Purpose:** Determine the impact of educating using a variety of teaching methods such as interactive games, food tasting, and informational pamphlets about fat and fat containing foods among participants that received a message that they were lower or higher than their peers, regardless of actual intake. For example the Low Intake message stated, “You are the in the 20th percentile of USU students. This means 80% of USU students eat more FV than you do.”

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**ABSTRACT:**

**Purpose:** The 2015 Dietary Guideline omit recommendations for total fat and cholesterol intake in the American diet. Additionally, didactic dietetic students at Utah State University (USU) reported ambivalence toward intake of fat and the effect on health.

**Pamphlet:** Determine the impact of educating using a variety of teaching methods such as interactive games, food tasting, and informational pamphlets about fat and fat containing foods among participants that attended the 2016 USU Food Day.

**Methods:** Participants (N=167) were recruited from general education courses and asked to complete a baseline survey containing a FV screener from the National Cancer Institute. They were randomized to receive one of four messages one week after the initial survey and asked to immediately to fill out the same FV screener. The Control group received no FV message. The Recommendation group received a message that the recommendation for FV is 4-5 cups per day. The normative groups received the recommendation and also received a message that they were either lower or higher than their peers, regardless of actual intake. For example the Low Intake message stated, “You are the in the 20th percentile of USU students. This means 80% of USU students eat more FV than you do.”

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**ABSTRACT:**

**Purpose:** Understand the short and longer term impacts of educating in a health fair setting on knowledge, self-efficacy, intent to change, and diet.

**Analysis:** Total FV intake and perception of peers FV intake were measured at baseline and again in one week, using repeated measures ANOVA.

**Results and Conclusions:** Those receiving the message that they were in the lowest 20th percentile of intake reported a significant half-cup increase in self-reported FV intake and a one-cup increase in perception of peers’ intake (p=0.037 and p=.001, respectively). These results indicate that normative messaging may influence self-reported FV intake of college students when this message informs the participant that they are in the lowest percentile of their peers.

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