

Internship Research Abstracts - DC Conference – Winnipeg - June 12-13, 2008

TITLE: St. Paul's Hospital employee food intake survey: a comparison of the food intake of employees at St. Paul's Hospital to the recommendations set out by the new Canada's Food Guide.

AUTHORS: T. Leung, R. Wolverton. University of British Columbia Dietetic Internship Program, Vancouver, BC.

OBJECTIVES: Nutrition education in the workplace may contribute to improved food intake by staff. The objective of this study was to compare St. Paul's Hospital employees' food intake to the new Canada's Food Guide, thus establishing a baseline of the employees' food intake. **METHODS:** A cross-sectional survey, St. Paul's Hospital Employee Food Intake Survey, was used to gather food intake data from a diverse sample of St. Paul's Hospital employees. Participants were recruited at the St. Paul's Hospital cafeteria during meal hours on two consecutive weekdays. St. Paul's Hospital employees from all departments/disciplines, male and female, were studied. Female employees who were pregnant/ breast-feeding were also included in this study. Intake of the four food groups (Vegetables & Fruit, Grain Products, Milk & Alternatives, Meat & Alternatives), age, gender, pregnant and/or breastfeeding, Vitamin D supplementation, number of fish servings/week, department/discipline, and food guide-related questions adopted from www.healthcanada.gc.ca/foodguide were measured. The hospital employees' estimated food intakes will be analyzed via frequency distribution and compared to recommendations (age and gender specific) set out by the new Canada's Food Guide using the Microsoft Excel program. Results: A total of 146 employees of St. Paul's Hospital, from all departments/disciplines, participated in this study. Results are currently pending. **IMPLICATIONS & CONCLUSIONSS:** The results of this study will be used to assist dietitians at Providence Health Care in determining how the hospital nutrition website can best address the employees' most pertinent nutrition issues in relation to the 2007 Canada's Food Guide.

TITLE: Does supplementing with probiotics in the critically ill adult population have health benefits?

AUTHORS: A Walker, R Tzianetas, K MacEachern. Mount Sinai Hospital Dietetic Internship Program, Toronto, Ontario.

PEN (Practice-based Evidence in Nutrition) is a tool designed to provide up-to-date information and recommendations for dietetic practice. **OBJECTIVE:** This review was conducted to determine if supplementation with probiotics in the critically ill adult population (in the ICU) have mortality and health benefits as compared to patients who do not receive supplements. **METHODS:** Searches were made of Medline, PubMed Cochrane Library Controlled Trials Register and TRIP database (1990 to February 2008). The specific search terms included: probiotics and ICU (critically ill or critical care). Trials were included if they studied the critically ill population, involved enteral administration of any probiotic and measured at least one clinical outcome. Standard methods of the PEN were used to indicate the strength of the research. For the purpose of this pathway, critically ill was defined as patients admitted to an ICU (medical, general and surgical), with or without mechanical ventilation. **RESULTS:** 12 eligible trials were included. Included trials were variable with regards to probiotics species, concentrations and the length of intervention. Populations were heterogeneous and APACHE scores in the clinical studies varied from 8 to 36. **IMPLICATIONS & CONCLUSIONSS:** It is not possible to make specific recommendations regarding the strain or dose of probiotic that will be most effective and further large trials are needed. Some research including case reports, express concern regarding the administration of probiotics to the adult critically ill population, especially those who are not immunocompromised. Cases of fungemia and bacteremia have been reported.

TITLE: Association between Maternal Macronutrient Intake and Weight Gain in a Downtown Toronto Hospital

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A healthy body weight and well-balanced food intake promotes a healthy outcome of pregnancy as supported by Health Canada's and Institute of Medicine recommendations. Total energy intake has been related to maternal weight gain in research; however Canadian data is scarce with regard to the association between maternal macronutrient intake and weight gain.

OBJECTIVE: The objectives of the study are to determine if there is an association between macronutrient intake and weight gain in pregnant women from a downtown Toronto acute care center and to determine if these women are meeting recommendations for protein, carbohydrate and fat intake and weight gain. **METHODS:** This is a descriptive, cross sectional pilot study. Outcome measures include net pregnancy weight gain and protein, carbohydrate, fat and energy intake. Demographic and anthropometrical data will be extracted from patient antenatal records. Ethical approval was received from Ethics Review Board at Mount Sinai Hospital. Dietary intake analysis will be performed using the Food Processor SQL Edition, version 9.8.1, ESHA Research. Statistical analysis will be performed with SPSS version 12.0. **RESULTS:** Eighteen out of seventy-five low-risk pregnant women have been recruited. Three participants have completed a 3-day food record and either during their 2nd trimester (15th to 24th week) or 3rd trimester (28th to 37th week) of pregnancy. Further results are pending. **IMPLICATIONS & CONCLUSIONSS:** This study will provide insight on recommendations during pregnancy and will support the initiation of a larger study relating macronutrient intake and in pregnancy outcomes.

TITLE: Procedures for providing gluten-free diets in Ottawa Regional Hospitals

AUTHOR: Y Buchanan. The Ottawa Hospital Internship Program, Ottawa, Ontario.

OBJECTIVES: The only treatment for celiac disease (CD), a genetic autoimmune disease, is a strict life-long gluten-free diet (GFD) (i.e. avoiding wheat, barley and rye). The objective of this pilot project was to evaluate the knowledge of the Patient Food Services Staff and the established hospital procedures for providing a GFD to inpatients in the Rural Southeastern Ontario Regional Hospitals. **METHODS:** Three questionnaires were developed for: 1) Foodservice Managers and Supervisors (FSM); 2) Dietitians and Diet Technicians (DDT); and 3) Foodservice Workers and Diet Aides (FSW). Questions included knowledge of CD, the GFD and hospital procedures for ensuring GFDs to inpatients. The questionnaires were mailed to each of 5 hospitals and distributed by the Food Service Managers to the staff. No coding or names were on the questionnaires to ensure confidentiality. **Results:** Of the 239 surveys sent out, 59 responses were received (8 FSM, 8 DDT and 43 FSW). The surveys from the FSM and DDT indicated that though some procedures are in place, some improvements are needed, including safe gluten free (GF) food preparation and timely identification of patients requiring the GFD. Of the FSW only 15 (37%) were able to correctly identify all of the GF foods listed, 23 (53%) were using separate utensils for serving GF foods but 65% reported that they were willing to learn more about the GFD. **IMPLICATIONS & CONCLUSIONS:** Better procedures and greater knowledge of the GFD are needed in these hospitals. Recommendations include: training programs for hospital nutrition staff and a follow-up study of staff knowledge and procedures in place for providing GFDs in the Ottawa hospitals.

TITLE: Eating behaviours and metabolic syndrome risk factors in patients attending a metabolic syndrome clinic

AUTHORS: K. Spec, J. Irvine., University of British Columbia Dietetic Internship Program; St. Paul's Hospital, Vancouver, BC.

OBJECTIVES: Metabolic Syndrome (MetS) is a clustering of metabolic abnormalities associated with insulin resistance, obesity and increased risk for cardiovascular disease and diabetes. The objectives were to determine if participating in nutrition and lifestyle education classes at a MetS program changed eating behaviours in patients and if changes in eating behaviours correlated to indicators of MetS such as weight and waist circumference.

METHODS: A retrospective chart review of patients attending a MetS clinic from Jan-07 to Apr-08 (n=46) was done. Responses from questions reflecting eating behaviours before and during the program were collected. Questions assessed whether patients limited intake of saturated/trans fats and sweets, increased fruits and vegetables, chose healthy snacks, regularly ate breakfast and dined out less often. A Chi-squared test will be used to determine correlations in responses at baseline to responses during participation in the program. Subjects that completed a 6 month follow up (n=33) were analyzed comparing changes in weight, waist circumference, blood pressure, lipids and blood glucose at baseline and at 6 months using a paired t-test. The Spearman rank-difference coefficient of correlation will be used to analyze these results compared with changes in responses to eating behaviour questions. Results: Preliminary results indicate that participation in the MetS program resulted in a significant mean weight loss from 99.2kg at baseline to 95.4kg after participation, $p = 0.04$. **IMPLICATIONS & CONCLUSIONSS:** Participation in a MetS program resulted in significant weight loss. Further analysis will be done to determine whether participation in the program resulted in changes to eating behaviour. Relationships between weight loss and changes in participants eating behaviour will also be explored.

TITLE: The prevalence of hyperlipidemia and associated risk factors in HIV infected patients at the Positive Care Clinic at St. Michael's Hospital.

AUTHORS: T Carroll*, I Gramlich*, A Thompson*, S DeMaio, P Darling, K Gough. St. Michael's Hospital Graduate Dietetic Internship Program. Toronto, Ontario.

Hyperlipidemia, which is a major risk factor for cardiovascular disease (CVD), appears to be more prevalent among HIV positive patients compared with the general population. **OBJECTIVES:** To determine the prevalence of hyperlipidemia and associated factors in patients attending the Positive Care Clinic at St. Michael's Hospital. **METHODS:** This retrospective review was conducted on randomly selected charts (n=201) of patients who attend the Positive Care Clinic. Demographic, clinical and lifestyle variables such as age, sex, weight, height, blood pressure, diabetes, family history of CVD, smoking, CD4 count, viral load, medications including anti-retroviral drugs as well as previous registered dietitian consult, were extracted from the charts. Hyperlipidemia is defined as two or more of the following: elevated LDL cholesterol (>4.14 mmol/L), elevated total cholesterol (>6.21 mmol/L), elevated triglycerides (>5.17 mmol/L), decreased HDL cholesterol (>5.17 mmol/L). Associations between each variable and hyperlipidemia will be determined using a Chi Square or t-test. Logistic regression models will be fitted to estimate unadjusted odds ratios for the association between hyperlipidemia and each independent variable. A multivariate logistic regression model will be considered, including all predictors whose univariate p-values <0.25. Results: Currently, 201 charts have been reviewed and data analysis is in progress. **IMPLICATIONS & CONCLUSIONSS:** This study will describe the prevalence of hyperlipidemia in this unique inner city population of patients who are HIV positive. Furthermore we hope to identify other contributing CVD risk factors to assist in the screening and care of these patients.

TITLE: Are long-term (6 months or greater) home parenteral nutrition patients (adults 18 years or greater) at risk of developing micronutrient abnormalities?

AUTHORS: J DaMaren, R Pallek, S Hansen, Hamilton Health Sciences, Hamilton, Ontario.

To identify and describe serum micronutrient abnormalities in adult patients receiving long-term (greater than or equal to 6 months) home parenteral nutrition at Hamilton Health Sciences. **OBJECTIVE:** To determine whether micronutrient abnormalities or trends exist in this population. **METHODS:** A retrospective chart review was conducted for 60 patients (n=60) in the HPN program within the last five years (2002-2007). Serum blood levels from routine blood work was collected from patient files for the following micronutrients: chromium, copper, iron, ferritin, manganese, selenium, zinc, vitamin D (25-OH), vitamin B12 and RBC folate. Inflammation markers (Leukocytes, ESR, C-Reactive Protein) and serum albumin data was also be recorded. Data was analyzed using average serum levels and a chi-square to establish significant relationships.

TITLE: : A pilot study to investigate if a 100% concentrated inulin supplement has an effect on constipation thereby simplifying bowel management care for geriatric patients

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Constipation affects 60-80% of patients in long term care facilities. Due to the increased risk factors for constipation, a dietary fibre supplement such as inulin has proven to be beneficial. **OBJECTIVES:** The objectives for this prospective pilot study was to (1) determine if 6g of an 100% concentrated inulin supplement will increase stool frequency and soften consistency; (2) investigate the effect on patients' current bowel medications; (3) provide information to Alberta Hospital Edmonton (AHE) to develop a bowel routine for all geriatric patients. **METHODS:** 26 patients (mean age 77+5.2) at AHE being treated for dementia and suffering chronic constipation, requiring prescription bowel medications, were eligible to participate in this study. **Data Collection:** All participants were given 3g of an inulin supplement twice a day as part of their scheduled medications. If, after two weeks, there was no change in the frequency or consistency of bowel movements (BMs), inulin was increased to 3g three times a day. BMs, fluid and intake were recorded. Bowel medications were assessed weekly and decreased according to BM frequency and consistency. **Results:** Preliminary findings indicate a significant decrease in the use of scheduled bowel medications ($p < 0.05$) with daily inulin supplementation. Although the change in frequency and consistency of BMs was not statistically significant, there was a clinically significant increase in BM frequency (16%). **IMPLICATIONS & CONCLUSIONSS:** The daily addition of a 100% concentrated inulin supplement may help to change current bowel care management, but further research needs to be conducted.

TITLE: A Survey of Perceived Dietary Changes in Clients with Type 2 Diabetes

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OBJECTIVE: Dietitians at the Metabolic and Diabetes Education Centre (MEDEC) provide education on lifestyle and dietary changes for clients with Type 2 diabetes. The purpose of this study was to determine if clients with Type 2 Diabetes who have attended nutrition education sessions at MEDEC, perceive that they have made dietary changes as a result of education and to review the barriers to and supports for these diet changes. **METHODS:** One hundred participants who completed an earlier MEDEC survey were randomly selected to participate in this study. Participants were mailed an information letter with a 34-item survey to complete. Questions focused on dietary behaviours, barriers and supports. **Results:** The response rate was 71%. Eighty-two percent of participants were over fifty. Ninety-seven percent made at least one dietary change. Changes were made to fibre, fat, portions, beverages, and food intake. Thirteen of 34 non-breakfast eaters report starting to eat breakfast since diagnosis. All participants agreed with all six support statements. The majority of participants disagreed with most barrier statements. Participants who attended more education sessions as well as attending both group and individual sessions made more dietary changes. **IMPLICATIONS & CONCLUSIONSS:** The dietary changes reflect recommendations made by MEDEC educators. Our results support the theory that fewer barriers and more supports relates to making more dietary changes. In addition, our results show a link between education and dietary changes. As the sample population was mostly over fifty years of age, the researchers cannot generalize the data to a younger population, or a Type 2 Diabetes population as a whole.

TITLE: Oral nutrition supplementation practice for elderly clients in long term care facilities in the Regina Qu'Appelle Health Region (RQHR)

AUTHORS: T Banow^{1,2}, T Cockburn ^{1,2}, L Voegeli^{1,2}, O Wilson^{1,2}, S Johnson³, J Coleman^{1,2}, R Nasser^{1,2}

Nutrition and Food Services¹, Regina Qu'Appelle Health Region Internship Program², University of Regina³, Regina, Saskatchewan.

OBJECTIVES: The purpose of this project was to explore the rationale for the current oral nutrition supplement (ONS) use for elderly residents in long term care facilities (LTC) in the RQHR.

METHODS: A telephone survey was developed and used to survey 17 individuals responsible for prescribing ONS for elderly residents in LTC facilities operated/affiliated with the RQHR. A letter was sent to directors of LTC facilities inviting the individuals responsible for prescribing ONS to participate in the study.

A follow-up phone call was conducted to set up a time for the telephone survey. Results: ONS prescriptions have increased over the past several years.

Dietitians were involved in only a small proportion of ONS prescriptions. The majority of individuals responsible for prescribing ONS included nursing staff, physicians and special care aids. The most common reasons for ONS prescriptions were decreased intake, weight loss or wound healing. Most participants indicated that residents received some education about the ONS and received limited encouragement to consume the ONS.

Weight increase, weight gain and wound healing were stated as measures for improvement, however not all participants provided follow-up. Reasons to discontinue the ONS included weight gain, increased intake, refusal of the supplement or death.

IMPLICATIONS & CONCLUSIONSS: There is limited involvement of dietitians in LTC in the RQHR. Prescription practices of ONS vary and there are currently no standard guidelines being followed, possibly contributing to increased ONS prescriptions. A food first strategy may be beneficial in LTC facilities in the RQHR.

TITLE: Lipid abnormalities in children infected with HIV, receiving anti-retroviral therapy

AUTHOR: A Caughey. Southeastern Ontario Dietetic Internship Program, Kingston, Ontario.

OBJECTIVE; To review current evidence regarding the incidence and nutritional management of lipid abnormalities in HIV infected children receiving anti-retroviral therapy (ART). **METHODS;** A literature review using major databases (including Medline, CINAHL, Cochrane Reviews) was carried out. Articles specific to lipid abnormalities (including dyslipidemia and lipodystrophy) in HIV-infected children (less than 18 years) were included in the review. Literature that addressed other metabolic abnormalities in this population, such as insulin resistance, was excluded. Articles were critiqued using Practice Based Evidence in Nutrition (PEN) guidelines. **RESULTS;** Fourteen articles met the criteria to be included in the review. Most of the evidence used to answer practice questions was C grade or limited. **IMPLICATIONS & CONCLUSIONS;** HIV treatment in children has been associated with lipodystrophy and dyslipidemia, specifically hypercholesterolemia and hypertriglyceridemia. This population is vulnerable to adverse effects of anti-retroviral therapy because of their status as growing organisms and likely long-term exposure to therapy, potentially increasing the risk of premature cardiovascular disease. Appearance of lipodystrophy may be specific to age, and may be associated with puberty. There are few known interventions to treat lipodystrophy and/or lipid abnormalities in HIV-infected children. No diet therapy has been established to manage lipodystrophy in this population. Based on expert opinion, optimizing diet quality (by following guidelines of the National Cholesterol Education Program) and exercise, including resistance and aerobic components, should be the first options in managing lipid abnormalities. HIV-infected children at risk for lipid abnormalities may benefit from a heart-healthy diet. Optimizing growth should also be a priority for HIV-infected children. Further attention to metabolic complications of therapy in this population is warranted.

TITLE: Serum 25-hydroxyvitamin D levels and the development of diabetes in individuals with cystic fibrosis.

AUTHORS: S Raisman, F Sultan, M Brotherwood, P Darling, D Kalnins, A Stephenson. St. Michael's Hospital Dietetic Internship Program, Toronto, Ontario.

Cystic fibrosis (CF) is a disorder that causes thick secretions resulting in pulmonary, pancreatic and gastro-intestinal complications. Cystic fibrosis related-diabetes (CFRD) develops in approximately 25% of adults with CF. Non-CF literature has shown that vitamin D deficiency, which has been reported in up to 80% of patients with CF, is associated with the development of diabetes mellitus .

OBJECTIVES: To examine the association between serum 25-hydroxyvitamin D 25(OH)D and the development of CFRD. **METHODS:** In a retrospective, case-control chart review design, serum 25(OH)D, pancreatic status, liver cirrohsis, age, gender, steroid use, microbiology, pulmonary function, nutritional status (body mass index) and lung transplantation will be recorded from both the pediatric and adult CF clinics in Toronto. Patients with CFRD (cases) will be compared with those without CFRD. Conditional logistic regression will be used to estimate crude and adjusted odds ratios and 95% confidence intervals for the association between serum 25OHD and the development of CFRD. The primary analysis will utilize the most recent level of vitamin D obtained in the 1 year period prior to the diagnosis of diabetes for the cases, and a similar period for the matched controls. **RESULTS:** Data collection is ongoing. **IMPLICATIONS & CONCLUSIONSS:** Hypovitaminosis D can easily be treated with vitamin D supplementation safely and inexpensively. If results from this study demonstrate associations between hypovitaminosis and CFRD development, future studies may be warranted that focus on using early supplementation for CFRD prevention.

TITLE: Validation of an abridged Patient-Generated Subjective Global Assessment as a screening tool for malnutrition in patients attending an outpatient oncology clinic.

AUTHORS: L Stoyanoff, E Leung, D Scaffidi, D Gabrielson, C Brezden-Masley, P Darling, St. Michael's Hospital Graduate Dietetic Internship Program, Toronto, Ontario.

Malnutrition is a prevalent complication of cancer and its treatment. Nutrition screening is essential in identifying those at risk. The Patient-Generated Subjective Global Assessment (PG-SGA) is a validated nutrition screening tool in oncology, however, time and resources required for the data collection and physical exam limits its use in practice. The Malnutrition Screening Tool (MST) is another validated tool for screening of malnutrition risk, but it yields little specific information pertaining to nutritional status. **OBJECTIVES:** To validate an abridged PG-SGA that omits the physical exam (ab-PG-SGA) as a screening tool, and compare the results with the PG-SGA and MST in oncology outpatients. **METHODS:** In a prospective, cross-sectional study, patients receiving chemotherapy in an outpatient oncology clinic (n=100) will complete the self-administered MST and ab-PG-SGA questionnaires regarding subjective parameters (i.e. weight, appetite). Trained individuals will conduct the PG-SGA physical exam and results will be verified for inter-rater reliability. Clinical characteristics such as age, diagnosis, cancer stage, treatment cycle, and metabolic demand (i.e. fever, steroid use) will be extracted from participants' charts. Correlations among the ab-PG-SGA, PG-SGA and MST will be calculated using Spearman R. Using the PG-SGA as the reference standard, receiver operating characteristic curve analysis will be conducted to estimate the sensitivity and specificity of various cut-off short form scores. **RESULTS:** To date 73% of the expected sample size has been recruited. **IMPLIMENTATIONS AND CONCLUSION:** The ab-PG-SGA tool may provide valid, accurate and clinically relevant information. Incorporating the ab-PG-SGA as an outpatient screening tool may allow time-effective, appropriate nutrition intervention and further improve overall patient care.

TITLE: Initial success predicts success at 6 months in the Children's Exercise and Nutrition Centre (CENC) pediatric obesity treatment program

AUTHORS: S Brennan, A Musico, B Timmons, L Gillis. Hamilton Health Sciences Dietetic Internship Program, Hamilton, Ontario.

OBJECTIVE: This study aims to identify predictors of success at 6 months to assist in enhancing effectiveness of treatment and reducing attrition within the CENC and other obesity treatment programs. We hypothesized that participants who did poorly at the second visit (V2) were at risk of being unsuccessful in the program by the 6-month visit (V6). **METHODS:** This retrospective chart review involved children and adolescents, aged 1 to 18 years, and used the quota sampling method. Sixty charts were equally divided between successful and unsuccessful study groups. The success of body fat reduction was defined by a mathematical index (MI), a validated tool to assess the changes in body fat for obese children and adolescents. Age, gender, ethnicity, household income, number of visits attended, start month, percent of body fat, and group education attendance were examined as covariates related to success. **RESULTS:** Using multiple linear regression, success at V2 accounted for 90.7% of the variance on success at V6, which was found to be significant (F9.81; $p < 0.001$). A t-test revealed that both test groups achieved success at V6, however the successful group had a significantly ($p = 0.030$) greater level of success (MI=27.7 vs. MI=5.5). All analyzed covariates were not found to be significant. **IMPLICATIONS & CONCLUSIONS:** The most important predictor of future success in a pediatric obesity treatment program is doing well early in the program. This remains constant between different ages, genders, ethnicities, incomes and levels of adiposity. Therefore, program planning and implementation should concentrate on the development of strategies to help children achieve initial success.

TITLE: The use of hospital pharmacy profiles to identify patients with metabolic syndrome and their history of nutrition intervention from a registered dietitian.

AUTHORS: A Gervais, D Quintal, S Leung, A Telner. The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario

OBJECTIVES: To determine if metabolic syndrome (MetS), as defined by the International Diabetes Federation (IDF), could be identified using an inpatient's pharmacy profile and whether those identified had previous intervention from a registered dietitian (RD). **METHODS:** Over a 3-month period, inpatient medication records were reviewed to identify inpatients taking at least one medication prescribed for MetS treatment. Data was obtained from inpatient medical charts, physical evaluations and interviews to determine inpatient's previous dietetic involvement. A blinded endocrinologist reviewed the data and identified those with MetS using IDF criteria. **RESULTS:** 77 people were included in this study; 54 were taking 1+ medication(s) for MetS (range 1 to 7). Of the 54, 26 (48%) inpatients were identified by the endocrinologist as having MetS. Those with MetS were taking significantly more medications than those without the syndrome (3.5 +/-1.4 vs. 2.2 +/-1.4 (mean +/- SD), respectively, $p < 0.01$). 80.8% of MetS inpatients were on 3+ medications for MetS. A positive correlation exists between the number of medications for MetS components and waist circumference among inpatients with the syndrome [$R = +0.477$ ($p < 0.05$)]. Nearly 2/3 of inpatients with MetS had never seen a RD or had not received nutrition counseling within 5 years (65.4%). The most common reason for seeing a RD among MetS patients was for Type 2 Diabetes (38.5%). **IMPLICATIONS & CONCLUSIONS:** Using a multidisciplinary team, this study has found a novel approach for a RD to identify patients with MetS within a community hospital. These patients could benefit from nutrition intervention from a RD.

TITLE: Are semi-vegetarians less likely to maintain a healthy BMI after treatment for anorexia nervosa than strict or non-vegetarians?

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The adoption of a vegetarian lifestyle has become more common in Western Society. Research and clinical experience has found that individuals suffering from Anorexia Nervosa (AN) may choose vegetarianism as a socially acceptable means of weight control. **OBJECTIVES:** To investigate if patients who choose a semi-vegetarian meal plan during treatment for AN are less likely to maintain a healthy body weight (BMI > 20) after treatment compared to strict and non-vegetarians. **METHODS:** Ninety-two participants with AN who successfully completed the inpatient eating disorder treatment program at Toronto General Hospital between 2001-2006, were analyzed. Weekly eating behaviour self-report records were reviewed retrospectively to characterize eating habits as semi-vegetarian (consumes dairy, eggs, fish and poultry), strict vegetarian (consumes dairy, eggs) or non-vegetarian. BMI, the primary variable of outcome, was assessed at three, six, nine and twelve months post-treatment. Data was not normally distributed, therefore non-parametric tests were conducted. Kruskal Wallis was run for continuous variables and Chi square was run between categorical variables. **RESULTS:** Preliminary results indicate a significant difference in BMI for semi-vegetarians at three ($p=0.05$) and six months post treatment ($p=0.0001$), compared to strict and non-vegetarians. BMI on admission for semi-, strict- and non-vegetarians was 14.3 ± 0.408 , 15.2 ± 0.457 and 15.0 ± 0.215 respectively. Mean BMI at 3 months was 18.7 ± 0.379 , 19.8 ± 0.578 and 19.7 ± 0.239 respectively. Mean BMI at 6 months was 17.9 ± 0.781 , 19.7 ± 0.850 and 19.2 ± 0.333 respectively. **IMPLICATIONS & CONCLUSIONSS:** Although preliminary, semi-vegetarians appear less likely to maintain a healthy BMI after treatment for AN compared to strict and non-vegetarians.

TITLE: Retrospective chart review of metabolic syndrome at Regina Community Clinic

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OBJECTIVE: The purpose of the study was to determine the number of clients admitted to Regina Community Clinic (RCC) with metabolic syndrome and what treatment options were offered. **METHODS:** A retrospective chart review was conducted for September 2006. Clients who were 18 years of age and older and who were seen by a RCC health professional were included. Clients who were pregnant (up to 1 year postpartum) were excluded. A data collection tool was used to collect: height, weight, waist circumference, demographics, laboratory values (triglycerides, HDL cholesterol, blood pressure, fasting glucose), and treatments offered by RCC healthcare professionals. Metabolic syndrome was defined using the National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III) guidelines, modified to include body mass index > 30 as a measure of abdominal obesity. **RESULTS:** Two hundred and eighty nine charts contained adequate data for analysis. The average age of this population was 55. Forty two clients met the modified NCEP ATP III criteria for metabolic syndrome. Forty out of 42 clients were offered at least one treatment option for metabolic syndrome. Approximately half of these clients were referred to a dietitian for dietary counseling, primarily for dyslipidemia or diabetes. Other therapies offered were exercise therapy (n=10 consults), medication (n=35). **CONCLUSION:** The study findings suggest that 15% of RCC clients met the metabolic syndrome criteria and 95% were provided with a number of treatment options. A metabolic syndrome pathway may be considered at RCC to assist with diagnosis and follow-up.

TITLE: Eat Smart! Workplace cafeteria program. A valuable tool to implement in The Ottawa Hospital.

AUTHORS: A McKellar, T Paluch, The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario.

OBJECTIVES: The purpose of this study was to assess whether The Ottawa Hospital cafeteria customers were aware of the Eat Smart! program. Additionally, the study sought to determine if the customers wanted healthier food choices, and would be influenced to make healthier food choices, if a health promotion program such as Eat Smart! was implemented in the cafeterias.

METHODS: A dietetic intern developed, tested and distributed the self-administered questionnaires consisting of six close-ended questions. A convenience sample was obtained by distributing questionnaires for two hours during lunch at The Ottawa Hospital cafeterias entrances. This method was selected based on the ease of access to the target population entering the cafeterias.

RESULTS: Seven hundred and forty seven questionnaires were distributed and 265 were returned, representing a 35.5% response rate. Thirty-five percent of the respondents were aware of Eat Smart! Ninety-six percent of the respondents wanted healthier food choices in the cafeterias, and 90% stated they would be influenced to make healthier food choices, if a program such as Eat Smart! was implemented in the cafeterias.

IMPLICATIONS & CONCLUSIONS: A large majority of customers want healthier food choices in the cafeterias, and would be influenced to make healthier choices with the introduction of a health promotion program. As a result, The Ottawa Hospital cafeterias should implement Eat Smart! Due to the respondents limited awareness of Eat Smart!, there would be a need to promote the program through advertising, prior to its commencement. Once employed, further observational research must be conducted to evaluate Eat Smart's! actual influence on customer food choice.

TITLE: A survey of the presence of yeast in the oral flora of long term care residents

AUTHORS: R Rousell, D Dutka, W Dahl. University of Saskatchewan, College of Pharmacy and Nutrition Professional Practice, Saskatoon Health Region, Saskatoon, Saskatchewan.

OBJECTIVES: The goal of this project is to determine the prevalence of *Candida albicans* colonization in the oral cavity of long term care residents and to determine if there is a relationship between the presence of yeast (*Candida albicans*) and the presence of dysphagia. Elderly residents in long-term care are at higher risk of developing oral yeast colonization. Risk factors are poor oral clearance, decreased salivary production, less oral care and dentures. The majority of healthy individuals do not have large amounts of yeast growth as part of their oral flora. **METHODS:** Current literature was reviewed and compiled. Luthercare Tower in Saskatoon, Saskatchewan was identified as the location for the study. Residents were selected from “dysphagia diet” meal plan lists. Kits were ordered through the University of Saskatchewan, which were able to detect *Candida albicans* by oral mouth swabs and a 24-hour incubation period. Receiving written consent from subjects needs to occur once operational approval from Saskatoon Health Region affiliate agencies is granted. **IMPLICATIONS & CONCLUSIONS:** The study is currently in progress. The hope is that this study will provide insight about the oral health of long-term care residents.

TITLE: The prevalence of protein and protein-energy malnutrition in a population of geriatric rehabilitation patients at SCO Health Service

AUTHOR: AL Nichols, The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario

OBJECTIVES: The main objective of this study was to determine whether there were a significant number of patients suffering from protein and protein-energy malnutrition (PEM) in a group of geriatric rehabilitation patients at SCO Health Service. **METHODS:** A retrospective chart review with a quality assurance design was used. Patients over 65 years of age admitted to the SCO Health Service geriatric rehabilitation program (GRP) between January 1st and December 31st, 2006 were included in the study (459 charts were reviewed). Patients were identified as protein or protein-energy malnourished based on their serum albumin concentration and body mass index (BMI) upon admission. The absence of a recorded serum albumin concentration, height or weight within 1 week of admission resulted in the patient's exclusion from the study. Prevalence and statistical significance will be analyzed using the Chi Square Test of Independence (χ^2) ($p < 0.05$) within the following categories: males and females between the ages of 65 and 74, 75 and 84, as well as 85 and above. **RESULTS:** The results of this study are pending due to delays in data collection; however, it is hypothesized that a significant number of patients will be protein or protein-energy malnourished within each category. The prevalence of malnutrition is anticipated to decrease when patients suffering from liver, kidney or acute inflammatory disease are excluded, as these conditions have been shown to negatively affect albumin concentration. **IMPLICATIONS & CONCLUSIONSS:** Understanding the nutritional status of a population facilitates the identification of a need for dietary intervention and the development of supplementation therapies. These in turn may lead to beneficial health outcomes for geriatric rehabilitation patients.

TITLE: Vitamin D in children with inflammatory bowel disease and cystic fibrosis: increasing vitamin D intake raises serum 25-hydroxyvitamin D ([25(OH)D])?

AUTHORS: T Vander Meulen, K Wadden, J Beauchamp, The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario.

OBJECTIVES: Many children with Inflammatory Bowel Disease (IBD) and Cystic Fibrosis (CF) are vitamin D deficient, and have low serum 25-hydroxyvitamin D ([25(OH)D]) levels . The objective of this study was to determine if a daily increase of vitamin D above usual intake for 6-8 months would significantly increase ([25(OH)D]) in children aged 4-19 years with IBD and CF. **METHODS:** Vitamin D intake and serum [25(OH)D] were measured in 159 children with IBD and 14 children with CF. Vitamin D and serum [25(OH)D] were measured before and after supplementation using a food/supplement frequency questionnaire. When baseline serum [25(OH)D] was <80 nmol/l, children were instructed to increase their vitamin D intake by 400 IU via food and/or supplement. **RESULTS:** Baseline average vitamin D intake was 595 ± 28.5 IU (mean \pm S.E.) and serum [25(OH)D] was 56 ± 1.7 nmol/l. After a span of 7.2 months, average vitamin D intake was increased by 329 ± 28.5 IU and average serum [25(OH)D] was raised by 14.5 ± 2.2 nmol/l (p-value <0.05). **IMPLICATION & CONCLUSIONS:** A modest increase in vitamin D intake led to a significant increase in serum [25(OH)D]. However further supplementation is necessary to increase 25(OH)D levels above 80nmol/L, as recommended by current research.

TITLE: There must be a better way: Developing a valid and feasible questionnaire to measure dietary practices of people with type 2 diabetes.

Part II: Testing construct validity

AUTHORS: A Betzelt, A Sambhi, K Cohen, E Gucciardi, L Li, J Madill, L Scott, M DeMelo, University Health Network Dietetic Internship Program, Toronto, Ontario

OBJECTIVES: Our group previously developed a clinician-administered questionnaire designed to measure the dietary practices of an ethno-culturally diverse adult population with type 2 diabetes from the Diabetes Education Centre (DEC) at Toronto Western Hospital. The purpose of this study was to test whether this questionnaire accurately measures three important dietary constructs of nutrition in diabetes self-management: dietary fat intake, carbohydrate loading and overeating. **METHODS:** A convenience sample (n=32) of English-speaking adult patients at the DEC with Type 2 diabetes will be recruited from March to April 2008. Subjects will be administered a 36-item questionnaire during their regularly scheduled appointments. Subsequently, feedback on the feasibility of the questionnaire from the subject and the clinician will be generated. Subjects will then be contacted via telephone to obtain two 24-hour multiple pass dietary recalls (previously validated method). Internal reliability and scale structure will be assessed using factor analyses techniques and construct validity comparing the questionnaire with the two 24-hour recalls. **RESULTS, IMPLICATIONS & CONCLUSIONS:** At present we have 28 subjects recruited. Completed questionnaires and 24-hour recalls have been obtained from all subjects and will be analyzed. We are currently in the recruitment phase and anticipate that future preliminary results will provide further direction on the development of a valid and reliable questionnaire. This will provide a clinically relevant assessment tool that may be applicable to the practice at the DEC and similar DEC settings.

TITLE: Cardiac Cachexia: the definition and nutritional implications

AUTHORS: M Geleynse, K Jia, M Morris, R Myers, A Ho, D Wunch. Sunnybrook Health Sciences Centre, Toronto, Ontario

OBJECTIVES: The purpose of this review is to develop a practical definition for cardiac cachexia (CC) based on current literature in order to aid in the identification of patients with this condition in a clinical setting. This review will also examine the role of nutritional intervention for patients with CC to help inform practice and to improve patients' clinical status. **METHODS:** A literature search was conducted using PubMed, Medline and Scholar's Portal with keywords related to CC and nutrition. Articles were chosen from 1976-2008. Additional articles were also individually selected from the reference section of relevant articles. This process generated 80 articles, however only 41 were included in the review because the remainders were not within the scope of this review. **RESULTS:** The definition that is most validated is one that suggests a weight loss $\geq 6\%$ in a period ≥ 6 months in heart failure patients without signs of other cachectic states. There is limited data on nutritional supplementation and specific micronutrient needs in patients with CC. The majority of studies regarding nutritional supplementation were conducted in cardiac surgery patients. As well, currently there is only one unpublished study suggesting that oral supplementation may be beneficial. However, based on comparable diseases and physiological plausibility, the 2006 ESPEN guidelines recommend the use of oral supplementation and/or enteral feeding to help stop or reverse weight loss. **IMPLICATIONS & CONCLUSIONS:** The definition stated above can be used to identify CC in heart failure patients in a clinical setting. More research needs to be done regarding the role of nutritional supplementation and requirements in CC patients.

TITLE: The knowledge acquired from the diabetes education clinic class at the Pembroke Regional Hospital

AUTHORS: Q Han. The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario

OBJECTIVES: Diabetes education enables those living with diabetes to better manage their condition and reduce their risk of developing complications. The objective of this research was to determine the knowledge acquired by clients of the Pembroke Regional Hospital's (PRH) Diabetes Education Clinic (DEC) class.

METHODS: An identical, validated questionnaire on the same topics taught in the DEC class was administered to 20 DEC clients: before, immediately after, and one week after they attended the class. The results were analyzed statistically using SPSS. Answers from each person's questionnaires were compared to evaluate the knowledge acquired in the class, and retained for one week. The results were also analyzed to determine whether there was any association between knowledge acquired and various demographic characteristics. Furthermore, the pre-class results were examined to identify pre-existing diabetes-knowledge gaps. **RESULTS:** 20 clients, 6 females and 14 males, completed all three surveys. There was a significant improvement in the post-class and one-week-follow-up results compared to the pre-class results ($P < 0.017$). There was no significant difference between the post-class and one-week follow-up results. There were no significant differences associated with knowledge acquired and the following demographic characteristics ($P > 0.017$): age, type of diabetes, duration of diabetes, whether or not clients had previously attended any diabetes class, whether or not clients had seen a dietitian or nurse regarding their diabetes, or level of schooling. Pre-existing knowledge gaps were the A1C target and the cholesterol ratio for people with diabetes. Although clients' knowledge of the A1C target did not increase, their knowledge regarding the cholesterol ratio did increase after attending the class. **IMPLICATIONS & CONCLUSIONS:** The PRH's DEC class increased clients' knowledge regarding diabetes.

TITLE: Are children with phenylketonuria meeting nutritional requirements for optimal bone health?

AUTHORS: L Burr, K Arnold, K Kuperberg, and V Austin, Department of Clinical Dietetics, Hospital for Sick Children, Toronto, Ontario.

Bone mineral density is decreased by 12% at the lumbar spine and 7% at the whole body level in children with phenylketonuria (PKU). Intakes of protein, calcium (Ca), phosphorus (PO₄), magnesium (Mg), and vitamin D are important dietary mediators of bone mass and medical formula is the primary source of these nutrients. To determine if diet contributes to the sequelae of low bone mass, intakes of these nutrients were assessed in comparison to the Dietary Reference Intakes (DRI). Children attending PKU clinics at the Hospital for Sick Children (HSC) were eligible to participate. Three-day diet records were obtained from participants (n=48). Plasma phenylalanine and biochemical indicators of bone metabolism were measured. Ethical approval was granted by the HSC Research Ethics Board. Data was analyzed using a factorial ANOVA by age group, gender, and compliance with medical formula prescriptions (P<0.05). Results indicated that mean nutrient intakes for participants met the DRI, but % DRI of Ca was <100% for subjects 9-13 y of age. Mean vitamin D intake was 240 ± 118% of the DRI, though only 54% of subjects consumed a multivitamin. Those compliant (C) with formula prescriptions had higher intakes of protein (P=0.03), PO₄ (P=0.01), Mg (P=0.008), and Ca (P=0.0002) (expressed as % DRI) than non-compliant (NC) subjects. Percent DRI of protein, Mg, and Ca were lower in NC females than C females (P<0.05). In conclusion, macro- and micronutrient intakes of children with PKU meet current DRI requirements. However, children who do not comply with recommended formula prescriptions may be at increased risk of poor bone mass accretion due to sub-optimal intakes of protein, Ca, PO₄, and Mg.

TITLE: A quality improvement project to assess the effectiveness of a nutrition risk identification tool completed by nursing upon patient admission to Toronto Rehabilitation Institute.

AUTHORS: H Klimczak. ARAMARK Dietetic Internship Program, Toronto, Ontario.

OBJECTIVES: The purpose of this quality improvement project was to assess the effectiveness of the identification of nutrition risk level (INRL) tool completed by nurses upon patient admission to the hospital by examining: the percentage, accuracy and timeliness of tool completion; the nutrition risk level identified by a nurse compared to the risk level identified by a registered dietitian (RD); the percentage of high nutrition risk patients identified by nurses; and the differences in the effectiveness of the INRL tool completion by a registered nurse (RN) versus a registered practical nurse (RPN). **METHODS:** The nurses in seven programs completed the INRL tool. If the tool fit the inclusion criteria, the RD completed the comprehensive nutrition assessment for the same patient and transcribed the results onto the weighted INRL tool for easier comparison. **RESULTS:** Overall, 72.0% of the INRL tools completed had the same nutrition risk level identified by both the RD and the nurse, with accuracy of the INRL tool completion by nurses varying from 44 to 100% across programs. Nurses underestimated high nutrition risk patients by identifying 30.5% as high risk, while RDs identified 43.9%. Differences between RNs and RPNs could not be evaluated as 89% of INRL tools were completed by RNs. **IMPLICATIONS & CONCLUSIONS:** In one program 93% of the tools completed by nurses matched both the risk level and the risk factors identified by the RD suggesting that the tool is effective when completed properly. In order to increase accuracy in other programs, further revisions to the tool need to be made and nursing requires further training on how to complete it properly.

TITLE: Vegetables and Fruit Consumption among Overweight and Obese First Nations and Non-First Nations Pregnant Women

AUTHORS: I Giroux^{1,2}, C Li², J Hemsworth^{1,2}, M Sopper³, M Mottola³, ¹Brescia MSc Foods & Nutrition Program - Internship Stream, ²Brescia University College and ³The University of Western Ontario, London, Ontario.

OBJECTIVE: Aligned with the new Eating Well with Canada's Food Guide, the purpose of this study was to determine if overweight and obese pregnant women at risk for developing gestational diabetes were meeting the daily serving recommendations of vegetables and fruit. **METHODS:** Sixty eight overweight and obese women (including ten First Nations) completed a self-administered quantitative food frequency questionnaire at baseline, between 16 and 20 weeks gestation, when joining the *Nutrition and Exercise Lifestyle Intervention Program* at The University of Western Ontario. Average pre-pregnancy Body Mass Index of participants was in the class 1 obesity category. **RESULTS:** The average daily intake of vegetables and fruit was 7.3 ± 4.1 servings, which was within Health Canada's recommendation of 7-8 servings for non-pregnant women. However, this indicates that additional vegetables and fruit were not consumed to help meet the extra 2-3 daily food guide servings required during pregnancy. In addition, 43 percent of all participants and 60 percent of First Nations women consumed less than two servings of vegetables daily. **IMPLICATIONS & CONCLUSIONSS:** These results suggest that these overweight and obese women consumed on average the minimum daily recommendations for vegetables and fruit for non-pregnant women, but were not getting the additional 2-3 food guide servings for pregnancy from vegetables and fruit. Furthermore, many had a low intake of vegetables. Future studies are warranted to confirm these preliminary findings. (Funded by the Canadian Institutes of Health Research – Institute of Aboriginal Peoples' Health).

TITLE: Measuring stress in a foodservice department

AUTHORS: N Bourgeois, McGill University, Montréal, Québec.

BACKGROUND: Recognizing and dealing with stress in a foodservice department is important in preventing workplace accidents and ensuring productivity¹. Evaluation of stressors in the department is a crucial first step. Many studies have been done in the private sector, but few in the public sector².

OBJECTIVES A diagnostic survey, obtained from Maine Employers' Mutual Insurance Company and David Lee¹, was used to assess whether employee stress is a concern in the foodservice department of a rehabilitation hospital.

METHOD: The survey required participants to rank thirty statements about workplace climate using a Likert scale from 1 to 5, where lower numbers corresponded to a higher potential of causing stress. All 16 employees, including dietary technicians, were invited to participate in the survey, and 10 surveys were completed and submitted. Average employee scores for all questions, and for each question, were calculated.

RESULTS: The average employee score was found to be 3.14, which indicates that employee stress may be a problem in the department. The highest scores, meaning less potential for stress, were for questions relating to job descriptions and expectations on the job, and the quality of services provided by the department. Twelve questions relating to adequate training and orientation, recognition, feedback and support, and teamwork and collaboration with other departments received average scores of less than 3.00.

IMPLICATION AND CONCLUSION: This study suggests a need for foodservice managers to focus staff initiatives on the areas mentioned above. In conjunction with providing stress management services, this may help increase productivity and quality of products within foodservice departments, as well as improve overall quality of working life and health and safety of employees.

¹. Lee D, MEMIC. Managing Employee Stress and Safety: A guide to minimizing stress-related cost while maximizing employee productivity. Maine Employers' Mutual Insurance Company 2000; 1. Available from www.memic.com

². Tangri, R. Putting a price on stress: How to measure – and reduce – the costs of stress in the workplace. *Canadian Healthcare Manager* 2007; 14(5):24.

TITLE: Measuring calcium homeostasis in hemodialysis patients

AUTHORS: J Singh, McGill University, Montreal, Quebec.

OBJECTIVE: Maintaining calcium homeostasis in a hemodialysis population requires continuous monitoring. Diet, medications and the dialysate all affect calcium levels. The aim of this study was to determine the degree of calcium regulation in hemodialysis patients in an acute care hospital in Montreal.

METHODS: Conducting this study required modification of an existing spreadsheet to collect all required parameters. Parathyroid hormone (PTH), albumin, calcium and phosphorus blood levels were collected in 69 hemodialysis patients and compared to normal blood values. Adjusted calcium and calcium phosphorus product were also calculated. All medication pertaining to calcium metabolism and their respective dosage levels were recorded including phosphorus binders such as Renagel or Calcium Carbonate, Vitamin D (1-alpha) and Sensipar. Furthermore calcium level in the dialysate was documented since this would affect blood calcium levels. After a thorough analysis recommendations for each patient were made. **RESULTS:** Analysis revealed that 96% of patients were in a state of poor calcium homeostasis, implying that at least one indicator was abnormal. 35% of patients had abnormal calcium levels, 51% had elevated phosphorus levels and 66% had abnormal PTH levels.

Recommendations made included changing medications such as the replacing calcium carbonate by Renagel in order to lower calcium levels, adding vitamin D to increase calcium absorption, or removing vitamin D to increase parathyroid hormone levels. Dietary changes such as lowering dairy product intake to decrease phosphorus levels and changes to dialysate composition were also suggested. **IMPLICATIONS & CONCLUSIONSS** These results show the high prevalence of sub-optimal calcium regulation in this group of hemodialysis patients. In the future, routine monitoring of calcium homeostasis indicators would be beneficial in helping to maintain and correct any abnormalities before further deterioration occurs.

TITLE: Oncology patient's information needs regarding nutrition and exercise

AUTHORS: CH Ting and C Saia, McGill University, Montreal, Quebec

BACKGROUND: The objective of this study was to determine the nutritional and physical therapy education needs of oncology outpatients and their needs for optimal symptom management and recovery at a teaching hospital. **METHODS:** A survey was developed by an oncology dietitian and a physiotherapist. It consisted of three parts: 1) patient's cancer history; 2) comments on visits with dietitian or physiotherapist and physical and nutritional problems; 3) how patients would like to receive information and the method of preference to contact with these professionals. Surveys were conducted in two departments: oncology day center and radiation oncology clinic. **RESULTS:** The study included 60 patients (52% male) with an average age of 63.8. Among the 20 types of cancer diagnosed, prostate (25%) and breast (20%) cancer were most prevalent. 90% of patients received radiation treatment, while half received chemotherapy. 45% of patients had consulted a dietitian and 20% had consulted a physiotherapist. The most mentioned nutrition issue was loss of appetite (18%). The information most frequently requested was for low residue diets (24%). Fatigue (25%) was the most common physical issue. The physical information most frequently requested was for exercise tips during and after treatment. 90% of patients preferred receiving information prior to treatment. The majority of patients were interested in contacting a dietitian, and method of preference for communication was via telephone. **IMPLICATIONS & CONCLUSIONSS** A quarter of cancer outpatients experienced loss of appetite and fatigue. Patients were interested in proactively receiving written information (pamphlets) from dietitians and physical therapists. The preferred communication method with dietitian and physiotherapist was by telephone. This survey identified that oncology outpatients would benefit from, and are interested in receiving nutritional and physical therapy interventions during their treatment.

TITLE: Community-based nutrition program for older adults in Montreal

AUTHORS: R Abdul-Hadi, S Lee, McGill University, Montreal, Quebec

The elderly are generally at increased risk of malnutrition due to a complex matrix of factors such as disease, inadequate/inappropriate food intake, poly-pharmacy, depression, reduced financial means, and functional disabilities. Independent-living seniors in the community often live alone. This may lead to increased numbers of people that are malnourished or at risk of malnutrition that go unidentified. Nutritional screening is an inexpensive and efficient method of identifying individuals in the community that may be at increased risk for impaired nutritional status. The need for a community-based screening program was identified for seniors 55 years and over that were clients of an elderly program at a non-profit organization situated in downtown Montreal; therefore, the objective was to establish a community-based nutrition program for the 135 older adult members. A needs assessment was conducted and information was arranged into components such as age, gender, and socio-economic status. Subjective information was collected from the group leaders and volunteers. Community resources and services were assessed to determine what is available for community members when they need nutritional intervention. CLSC dietitians were contacted to determine a protocol for referrals of individuals identified to be at high nutritional risk. The DETERMINE screening tool was chosen due to its validity, sensitivity, specificity and simplicity in comparison to other resources. The checklist was designed to raise user awareness of potential nutrition problems by considering personal characteristics and behaviours associated with poor nutritional status. During the two-week period, it was observed that eating alone, poly-pharmacy, and poor dentition were the main factors which correlated with a higher nutritional risk. Finally, it is hoped that early identification will allow for timely intervention and prevention of malnutrition.

TITLE: Gestational diabetes: Assessment of compliance with postpartum blood sugar screening and identification of barriers and facilitators to screening.

AUTHORS: A Cividino*, J Guizzo, M Gravelle. Northern Ontario Dietetic Internship Program, Sudbury, Ontario.

OBJECTIVES: Women with a history of gestational diabetes mellitus (GDM) are at a greater risk for developing subsequent type 2 diabetes. The Canadian Diabetes Association (CDA) 2003 Clinical Practice Guidelines recommend postpartum blood glucose screening within the first six months of delivery to facilitate early detection of type 2 diabetes. The purpose of this study is to determine the number of women who have received screening according to the CDA guidelines, and to identify possible barriers and facilitators to postpartum screening. **METHODS:** A cohort of women who received prenatal GDM education from a local diabetes education centre were contacted (n=29) to participate in a telephone interview. The information gathered in the interview was used to determine the number of women who received screening for type 2 diabetes after delivery, the screening method used, and when the test took place. Participants were also asked to identify personal barriers or facilitators to receiving screening. **RESULTS:** Of those who participated (n=27), 70% reported receiving a blood test screening for type 2 diabetes; however, only 42% reported having been screened within six months postpartum. A frequently reported barrier to screening included participants' unawareness of the screening recommendation. The most frequently reported facilitator to screening was hearing the recommendation from a physician or through the diabetes education centre. **IMPLICATIONS & CONCLUSIONS:** Less than half of the women contacted received screening in compliance with the CDA guidelines. Local healthcare providers appear to influence whether a woman receives screening or not; consequently, efforts may be needed to increase the awareness of and adherence to the CDA guidelines among healthcare providers involved in postpartum care.

TITLE: Development of an implementation strategy for Algoma Public Health's snactivity kits: A resource for elementary school teachers

AUTHORS: E Frank*, L Jones. Northern Ontario Dietetic Internship Program, Sault Ste Marie, ON

OBJECTIVES: To determine an implementation strategy for Algoma Public Health's Snactivity Kits. **METHODS:** Public health key informants, including Public Health Nurses and Registered Dietitians, with experience in school health were interviewed. Two elementary schools from the public school board and two from the Catholic board in Algoma were randomly selected and teachers were asked to participate in a focus group. One school from each board agreed to participate. Key informant interviews and focus group responses were coded and analyzed for themes. **RESULTS:** The following eight key themes were highlighted as important when implementing a new public health school resource; 1. Ensure school boards are supportive of the implementation 2. Provide teachers with an incentive during an information session, 3. Identify a public health contact person for the resource, 4. Make the information session interactive, 5. Be on the agenda of a staff meeting or PD day to introduce the resource, 6. Follow up on use of the resource and provide additional support if needed after the introduction, 7. Make the information session easily accessible and 8. Utilize Public Health Nurses attached to schools to assist in the implementation. The most effective method of information delivery to teachers was identified as providing an in-service on the resource to each school. **IMPLICATIONS & CONCLUSIONSS:** Each school has individual needs and what works well for one school may not work well for another. With the adoption of the Comprehensive School Health model, utilizing Public Health Nurses attached to schools can be an effective strategy for implementing public health school resources, as they are able to assist with in-servicing and identifying the needs of each school.

TITLE: Use of an abridged version of the PG-SGA to compare level of nutrition risk in ambulatory cancer patients to rate of referral to a Registered Dietitian (RD).

AUTHORS: K Zaporzan*, S Pienig. Northern Ontario Dietetic Internship Program, Thunder Bay, Ontario.

OBJECTIVES: Presently, Regional Cancer Care (RCC), Thunder Bay Regional Health Sciences Centre (TBRHSC), does not use a nutrition screening tool to identify patients at elevated nutrition risk and in need of nutrition intervention. The aim of this study was to compare the proportion of patients identified at each level of nutrition risk, using an abridged version of the Patient Generated – Subjective Global Assessment (PG-SGA), to the proportion of those actually referred to an RD for nutrition intervention. **METHODS:** This is a prospective, cross-sectional, observational study. An abridged version of the PG-SGA was administered to ambulatory chemotherapy and radiation therapy patients receiving active cancer treatment (n=62). Informed consent was obtained. This abridged version consisted of the first four questions of the PG-SGA, which focus on weight history, food intake, appetite and other symptoms, and functional status. Patients screened were reviewed by the RD to determine if they were receiving nutrition intervention or had been referred within two weeks of being screened. **RESULTS:** Of the 62 patients screened, 40 (66%) were at moderate-high nutrition risk. Fifty-one were not referred to the RD, and of these, 31 (61%) were at moderate-high nutrition risk. **IMPLICATIONS & CONCLUSIONSS:** The majority of patients at moderate-high levels of nutrition risk are not being identified by current methods at RCC, TBRHSC. The results may support the implementation of the abridged PG-SGA as a standard nutritional screening tool to assist in identifying patients at elevated nutrition risk.

TITLE: Are women with histories of gestational diabetes mellitus utilizing postpartum education opportunities promoting healthy lifestyle modifications?

AUTHORS: M Babiak. Northern Ontario Dietetic Internship Program, Thunder Bay, Ontario.

OBJECTIVES: The objectives were to: (1) determine the attendance rate of Aboriginal and non-Aboriginal women, at a 6 week postpartum counselling session, with previous gestational diabetes mellitus (GDM), (2) identify the demographics of clients who have attended and who have not attended the postpartum session, and, (3) consider alternative intervention and education strategies that may be of benefit and feasible to implement at Diabetes Health Thunder Bay (DHTB) if a significant percentage of women did not attend the postpartum session. **METHODS:** A retrospective chart review (n=278) was conducted on women with GDM that have used the services of DHTB sometime before, during or after their pregnancy (January 1998 – December 2007). A literature search was performed to examine the importance of an initial postpartum counselling session, as well as continuing education in the postpartum period. **RESULTS:** Of the 278 charts available and reviewed, 93 women (34%) attended the postpartum session. Of these women, 20 (22%) were Aboriginal and 73 (79%) were non-Aboriginal. Seventy-eight women (84%) were from Thunder Bay and 15 (16%) were from outside Thunder Bay. A family history of diabetes was noted in 61 (66%) women attending, while 76 (82%) had a partner, 54 (58%) were employed and 13 (14%) had some type of previous diabetes education prior to pregnancy. **IMPLICATIONS & CONCLUSIONS:** Almost 70% of women with histories of GDM are not utilizing the postpartum education sessions offered at DHTB. The majority that do attend are non-Aboriginal women living in Thunder Bay, with a family history of diabetes, have a partner and are employed. Further research on this population is worthy to identify effective postpartum diabetes education strategies and programs.

TITLE: Healthy Foods in Arenas

AUTHORS: M Parrott. Northern Ontario Dietetic Internship Program, Timmins, Ontario.

OBJECTIVES: The objectives of this research project were to: (1) evaluate the interest for healthier food choices in the arenas, (2) determine what foods and beverages are currently being selected by patrons and (3) assess what proportion of patrons bring food or beverage items to the arena with them and what these items are. **METHODS:** A cross sectional, exploratory key-intercept survey was conducted at 4 arenas in Timmins. The study population represented a convenience sample of arena patrons and staff over the age of 15. Participation was voluntary with no incentives. Almost all patrons who were approached participated. **RESULTS:** Of the 83 patrons surveyed, 93% indicated they would like more healthy choices available. Foods purchased during the last three visits to local arenas included French fries (purchased by 35% of surveyed patrons), chocolate bars (16%), and chips (16%). Top beverages included sports drinks (37%), water (35%) and pop (17%). Eighty three percent of those surveyed felt that healthy foods should cost the same or less than unhealthy foods, while only 29% felt this should be achieved through higher taxation of unhealthy foods. Healthier items in demand include fresh fruit (as indicated by 41% of surveyed patrons), sandwiches (39%), yogurt (34%), soup (33%), 100% fruit juice (31%) and fresh vegetables (30%). Food or beverage items were brought to the arena by 54% of patrons. Items included Tim Horton's coffee, fresh fruit, water and sandwiches. **IMPLICATIONS & CONCLUSIONS:** Results indicate that there is an interest for healthier food and beverage choices in the arenas in Timmins. Patrons are currently selecting high calorie, high fat foods, and high sugar beverages with the exception of water. Further research is needed to determine if patrons will purchase healthier items if made available.

TITLE: Prevalence of childhood obesity in Cochrane and Moosonee, Ontario: a cross-sectional study

AUTHOR: N Strong. Northern Ontario Dietetic Internship Program, Timmins, Ontario.

OBJECTIVES: This study was completed to contribute to the development of surveillance data to determine the prevalence of obesity in grade 6 students in Cochrane and Moosonee. It is part of a larger data set that will assist in identifying a possible need for public health programs to promote childhood health in the Porcupine Health Unit (PHU) catchment area. **METHODS:** Permission to conduct the study was obtained from school boards and participating schools. A passive consent procedure was utilized to recruit participants (n=103). Students who did not wish to participate were excluded from the study. Students were blinded to the results. Anthropometric measurements were taken using a stadiometer and an electronic scale. Body Mass Index was calculated and compared to the Center for Disease Control and Prevention criteria to determine the prevalence of obesity, overweight, healthy weight, and underweight categories. Data were further analyzed based on gender and ethnicity. **RESULTS:** Anthropometric measurements were taken of 80 students, a response rate of 78%. The median age was 11.2 years. Of the students measured 59% were female and 41% were male, there was no statistical difference between genders. For Cochrane and Moosonee, respectively, the prevalence of underweight was 2% and 0%, healthy weight was 38% and 42%, overweight was 26% and 19%, and obese was 34% and 39%. Due to a small sample size no conclusions could be drawn on ethnicity and weight. **IMPLICATIONS & CONCLUSIONS:** The results suggest a high prevalence of overweight and obesity in grade 6 students in Moosonee and Cochrane, similar to previous surveillance efforts in the PHU catchment area, indicating a need for the promotion of healthy eating and physical activity for children in the PHU area.

TITLE: Examining if a self-directed learning (SDL) tool is a clear and adequate source of nutrition information for Public Health Nurses

AUTHORS: N Granville*, C Colapinto, D Malaviarachchi, Northern Ontario Dietetic Internship Program, Sudbury, ON.

OBJECTIVES: Effective early intervention and prevention strategies are needed to reduce the risk of nutrient deficiencies in infants; however, nutrition services in public health are limited. All Public Health Nurses (PHNs) in the Healthy Babies Healthy Children (HBHC) and Family Health programs work directly with community members considered at-risk for nutrition related health issues. This study aims to assess whether a Self-Directed Learning (SDL) tool is a clear and adequate source of infant nutrition information for PHNs. **METHODS:** A SDL tool was created by public health dietitians to assist PHNs in responding to basic infant nutrition related questions. All PHNs in the HBHC and Family Health Programs in the Sudbury & District Health Unit service area were invited to participate (N=30). Eligible participants received a baseline survey followed by a post-SDL survey. At baseline and post-SDL, the response rate was 77% and 63% respectively. Data was analysed using frequencies and percentages. **RESULTS:** Upon completion of the SDL tool, 32% of PHNs agreed or strongly agreed that they preferred SDL. Eighty percent agreed or strongly agreed that the SDL tool was a good learning experience, though 37% agreed that the time taken to complete the SDL tool conflicted with work responsibilities. Eighty-five percent agreed or strongly agreed that the SDL tool was easy to understand. **IMPLICATIONS & CONCLUSIONSS:** The SDL tool appeared to be a clear source of nutrition information for PHNs. Important directions for improving the SDL tool were identified. Other avenues for disseminating nutrition information should be investigated as many did not prefer SDL. Future research is warranted to examine the tool's effectiveness.

TITLE: Effects of modular protein supplementation on serum albumin levels in continuous ambulatory peritoneal dialysis (CAPD) patients

AUTHORS: R Frayling*, K Fisher. Northern Ontario Dietetic Internship Program, Sault Ste. Marie, Ontario.

OBJECTIVES: Protein-energy malnutrition is indicative of future morbidity and mortality among the CAPD population, and often reflected in serum albumin levels below 40g/L. The purpose of this study was to determine if protein supplementation increases serum albumin levels among CAPD patients.

METHODS: This was a prospective, intervention study. Participants were recruited at the Sault Area Hospital CAPD program. Ten patients met study criteria, including serum albumin levels <40g/L during one pre-trial month (December or January), age greater than 18 years, and absence of acute illness, inflammation, or gastrointestinal dysfunction. Seven eligible patients (70%) consented to participate. One participant was disqualified due to missing data. A 53-day trial was conducted in which the participants (n=6) were instructed to consume Resource® Beneprotein powder four times per day (total=24g pro/d) in conjunction with their usual diet, and record actual supplement intake. A pretest-posttest design was utilized to determine the effect of protein supplementation on serum albumin, using two months pre-trial values and one month post-trial values. **RESULTS:** Fifty percent (n=3) of participants consumed >75% Beneprotein powder and 50% (n=3) consumed <75%. Inter-group comparison of pre-trial and post-trial serum albumin levels lacked the results needed to warrant a definitive conclusion. Both study groups showed similar increased mean serum albumin (8%). All participants demonstrated increased post-trial serum albumin. **IMPLICATIONS & CONCLUSIONSS:** This study suggests a trend between oral protein supplementation and increased serum albumin, and supports the need for further exploration. Oral protein supplementation is a promising intervention; however adherence is often a barrier. A larger sample size and control for oral intake are needed to overcome the limitations of this trial.

TITLE: Cognitive testing of a food frequency questionnaire for use in the Good Food Box program population.

AUTHOR: S Keller, Northern Ontario Dietetic Internship Program. Thunder Bay, Ontario.

OBJECTIVES: To evaluate the cultural relevance of a food frequency questionnaire (FFQ) and its comprehension level appropriateness for the customers of the Good Food Box Program (GFB). A secondary objective was to collect and assess qualitative data of customers' thoughts towards the meanings of the food frequency questions. **METHODS:** A convenience sample of current GFB customers (n= 24) was randomly selected to participate in the telephone interview. All 24 (100%) agreed to participate. Surveys were conducted over a one week period between the hours of 10:00 am and 7:00 pm. Participants completed a validated food frequency questionnaire containing six questions, and a previously tested cognitive testing questionnaire which addressed clear language, ability to understand and perceived meanings of the six FFQ questions. Demographic data were also collected. **RESULTS:** Almost all respondents stated that there were no words in any question that were hard to understand and that all the FFQ questions made sense. Almost one in five (18%) respondents thought rewording the food frequency questions to use one consistent time frame of intake would create more clarity. Four main themes were derived from respondents' thoughts regarding the meanings of the six food frequency questions. These included: health, financial implications, food and cooking, and frequency of intake. **IMPLICATIONS & CONCLUSIONSS:** The fruit and vegetable FFQ used in this study can be used with the GFB population without cognitive or cultural barriers, to provide future intake results. In demonstrating that this FFQ tool is useful in the GFB population, it can now be used to meet the long term objective, that is, to evaluate the effectiveness of the GFB on fruit and vegetable intake of its' customer population.

TITLE: Clients with Hepatitis C at the Oasis Program do not meet their nutrient needs.

AUTHORS: CD Holland, O Wodin, Ottawa Hospital Dietetic Internship, Ottawa, Ontario.

OBJECTIVES: To determine the nutrient intake and status of the Hepatitis C virus (HCV) positive clients at the Oasis Program in Ottawa, Ontario. **METHODS:** The status of serum albumin, ferritin, folate, vitamin B12, and vitamin D were obtained from subjects' medical files (n=12). During individual interviews, height, weight and 24-hour diet recalls (including supplement intake) were recorded. Diet recalls were analyzed using Food Smart 6.0; supplement intake was then added and results compared to Dietitians of Canada (DC) guidelines for HCV as well as Canada's Food Guide (CFG) to determine adequacy of nutrient intake. Lab results were compared to normal values. Food access and hunger issues were evaluated with the Household Food Insecurity Access Scale (HFIAS). **RESULTS:** On average, intake (from food and supplements) of protein, fibre, Magnesium (male), Calcium (age 19-50), Zinc (male), Iron (female) and vitamins A (female), K (male) and B₁₂ were significantly lower than DC guidelines. However, average intakes of energy, carbohydrate, folate, thiamine, niacin, Magnesium (female), Calcium (age ≥ 51), Zinc (female), Iron (male) and vitamins A (male), D, E, K (female), C and B₆ were not significantly different. Recommendations were not met for any food groups according to CFG. Serum levels of albumin, ferritin, folate and vitamin B₁₂ were within accepted parameters; serum vitamin D was outside normal range, but results were not significant. Furthermore, 67% of participants indicated that their households experience severe food insecurity. **IMPLICATIONS & CONCLUSIONSS:** Based on the results, clients of the Oasis Program with Hepatitis C are not meeting their nutrient needs. This reinforces the need to consider supplementation with this population.

TITLE: Does the nutrition intervention for patients with prediabetes or type 2 diabetes lead to changes in dietary intake?

AUTHORS: S Edginton, A Sharma, K Camelon, J Madill, A Murphy. University Health Network Dietetic Internship Program, Toronto, Ontario.

OBJECTIVES: Dietary adherence is essential to optimal metabolic control, which reduces the risk of complications associated with prediabetes and type 2 diabetes. There is little evidence regarding the effect of nutrition intervention on dietary habits. The purpose of this study was to measure changes in dietary intake following nutrition intervention. **METHODS:** Seventeen newly referred subjects with prediabetes or type 2 diabetes from the ambulatory endocrine clinic at Toronto General Hospital were enrolled. Dietary habits were assessed using a validated Nutrition Evaluation Tool at baseline and will be reassessed at one month post nutrition intervention to evaluate changes in dietary intakes. **Statistical Analysis:** Baseline data was summarized using frequencies for categorical variables. **RESULTS:** We report the following baseline data. Sixty-seven percent of subjects consumed high sugar foods daily; 72% consumed >30% of their daily caloric intake from fat; 61% did not meet the recommended fibre intake (>25 g/d); 55% did not meet non-caloric fluid recommendations (>8 cups/day); and 17% missed at least one meal weekly. **IMPLICATIONS & CONCLUSIONS:** Improvements are anticipated in sugar, fat and fibre intake, non-caloric fluid consumption and meal regularity following nutrition intervention. Attainment of anticipated changes in dietary intake will demonstrate the effectiveness of the current nutrition intervention at the ambulatory endocrine clinic at Toronto General Hospital.

TITLE: Development and pilot testing of an instrument to assess nutrition messages on four micronutrients in Canadian magazines

AUTHORS: L Zalot, The Ottawa Hospital Dietetic Internship Program; M Cooper, Health Canada; Ottawa, Ontario

OBJECTIVES: As the development of nutrition policies becomes more extensive, the dissemination of accurate information to consumers is very important. Many Canadian women have marginal intakes of calcium, iron, vitamin D, and folate; therefore, environmental factors such as media messages that are portrayed to women need to be examined. The objective of this project was to develop and pilot test a coding instrument used to assess the quantity, types and accuracy of messages related to calcium, vitamin D, iron and folate, for use in a larger Health Canada (HC) study. **METHODS:** An electronic coding sheet and codebook were created to capture the explicit and implicit messages related to the micronutrients of interest in three different magazines. Using content analysis methodology, a sample of magazine issues from Chatelaine, Canadian Living and Homemakers (n=16) were analyzed independently by two coders. Some of the criteria examined within each magazine issue included the quantity of messages, the micronutrients of focus in each message, and how the nutrients were presented (e.g., food, recipe analysis, supplement, etc.). **RESULTS:** The number of messages presented in each magazine issue ranged from six to eighty. The nutrient analysis of recipes was the most common source of information on these micronutrients. Overall, not all messages accurately reflected Canadian nutrition policy, including nutrient content claims and nutrient recommendations for different age-sex groups. **IMPLICATIONS & CONCLUSIONS:** Based on the results of the pilot test, the coding instrument will undergo further revision for utilization within the larger HC study. Canadian nutrition policy regarding these four micronutrients needs to be represented more accurately in magazines targeted towards women.

TITLE: Impact of disordered eating on fertility, reproduction and pregnancy outcomes

AUTHOR: E Di Croce. Southeastern Ontario Dietetic Internship Program, Kingston, Ontario

BACKGROUND: The prevalence of disordered eating in females remains high, therefore the purpose of this literature review was to provide concise evidence-based practice statements to guide health professionals faced with the following practice questions: 1) Are infertility complications more commonly found among women with a diagnosed eating disorder than women without an eating disorder? 2) Is there evidence to support that certain birth complications for the fetus/infant may result in women with a history of a diagnosed eating disorder? **METHODS:** A comprehensive literature review from 1979 – 2007 was completed on the effects of eating disorders on fertility, reproduction and pregnancy outcomes using CINAHL and MEDLINE databases. Articles were evaluated and the evidence was graded according to Dietitians of Canada's Practice-based Evidence in Nutrition (PEN) resource methodology. **RESULTS:** Eighteen studies confirmed that caloric restriction and under-nutrition have been identified as contributing factors to infertility in women and frequently include adverse consequences associated with reproductive health. Recent literature investigating fertility and reproduction in women with a history of eating disorders suggests that eating disorders may be associated with more frequent obstetrical complications. **IMPLICATIONS & CONCLUSIONSS:** Pregnancy has been found to be less common in women with anorexia nervosa, bulimia nervosa and eating disorders not otherwise specified, due to amenorrhea caused by the extreme weight loss associated with the disorders. Although menstrual cycle irregularities do not appear to significantly decrease the long-term ability to conceive, women with eating disorders are at an increased risk of obstetrical complications such as preterm delivery, low birth weight, and higher incidence of Caesarean births, miscarriages and infants with small head circumference.

TITLE: Introducing spoken menu increases patient satisfaction and decreases food costs

AUTHORS: T Ganti, ARAMARK Dietetic Internship Program, Toronto, Ontario.

BACKGROUND: Trillium Health Centre (THC) utilizes a non-selective menu system determined mainly by diet order and food allergies. The aim of this study is to improve patient satisfaction with food services and decrease food cost and waste through implementing an alternative menu system, “Spoken Menu”, on selected inpatient units. **METHODS:** Spoken Menu is a system whereby menu marking for lunch and dinner is done at the bedside, by a food service employee, utilizing a laptop computer on a cart, wireless connectivity and Meditech food service software. Patient satisfaction on four trial units was measured before and after implementing Spoken Menu. Similarly feedback from nursing and hospitality staff on perceived patient satisfaction was obtained. The data was collected and analyzed using SPSS software. Food costs for a one week period pre and post implementation were calculated using patient production tally reports. Food waste was also evaluated based on dish room waste audits. **RESULTS:** The results showed significant improvement in patient satisfaction. Average satisfaction results for excellent and very good increased by 27% to 43% from pre to post implementation, among all criteria investigated. 87% of patients reported increased satisfaction and support the continuation of the program. 86% of nursing and hospitality staff felt that Spoken Menu is a value added service and should continue. Spoken Menu saved \$285 in food cost/week (~\$0.32/patient) for the four trial units. However no effect on food wastage was observed on the trial units. **IMPLICATIONS & CONCLUSIONSS:** Spoken Menu increased patient satisfaction and decreased food cost relative to a non-select menu system. THC is considering extending Spoken Menu to other inpatient units. This innovative service model may have benefits for other acute care facilities as well.

TITLE: Preferences for traditional menu items for acute and long term care patients in Newfoundland and Labrador – is there a need for a provincial menu?

AUTHORS: Amanda Burton, ARAMARK Dietetic Internship Program, Gander, Newfoundland

OBJECTIVE: The objective of this study is to determine if ARAMARK is meeting the traditional meal preferences of the current Newfoundland and Labrador population and if not, to make recommendation for change. The variables being measured are the number and type of traditional menu items currently being served in acute and long term care facilities versus patient preferences.

METHODS: Subjects were recruited from Newfoundland and Labrador ARAMARK acute and long term care facilities. Written surveys were used to solicit acute care patient preferences and desired frequency of a defined list of traditional Newfoundland menu items. Focus groups were used in long term care facilities to seek the same information.

RESULTS: Overall the response rate for the written survey was 26%. The most preferred menu items at 89.4% were varieties of cod fish and native berry desserts. All preferred menu items were desired at a frequency of once per week, except for homemade breads, and native berry desserts, which had a desired frequency of twice per week on acute care menus. Long term care focus groups confirmed that traditional menu items

(eg. jiggy's dinner) should be served once per week. Analysis of menus in use and standard ARAMARK Healthcare menus indicate that a provincial menu tailored to the preferences of this population would be valuable.

IMPLICATIONS & CONCLUSIONS: Acute and long term care patients prefer specific traditional menu items at frequencies of at least once per week. Separate provincial menus for acute and long term care which reflect patient preferences would benefit this population.

TITRE : Perception de l'utilité d'un planificateur de repas auprès des employés de l'Hôpital régional Dr Georges-L.-Dumont (HRGLD)

AUTHORS: W Diyamona, M Surette. Programme d'Internat en diététique, Hôpital régional Dr Georges-L.-Dumont, Moncton, Nouveau-Brunswick.

OBJECTIFS : 1) Organiser un *Focus group* avec les diététistes de l'HRGLD pour déterminer les éléments essentiels d'un planificateur de repas (PR); 2) Développer une ébauche d'un PR; 3) Évaluer l'utilité de l'ébauche du PR et 4) Émettre des recommandations pour le développement d'un PR pratique.

MÉTHODOLOGIE : Le PR est composée de plusieurs sections. Au recto se trouve l'horaire d'une semaine divisé en trois repas et collations, des conseils du Guide alimentaire canadien et un espace réservé pour inscrire les activités physiques. Au verso sont présentés des trucs pratiques, le mode d'emploi du planificateur et une section pour inscrire les recettes favorites. Une invitation a été lancée aux employés de l'HRGLD pour évaluer l'ébauche et 59 employés ont accepté de participer à l'étude. Ils devaient utiliser le PR pendant une semaine et répondre à un questionnaire évaluant l'outil.

RÉSULTATS : Vingt-six personnes (44%) ont complété le questionnaire. Les trois repas et collations ont été planifiés respectivement par 79,5% et 73% des répondants. La section *Conseils* a été trouvée utile par 69,3% des répondants et 80,8% ont utilisé la section *Activités*. De toutes les sections, les sections *Inventaire de recettes favorites* et *Trucs pratiques* étaient les moins utiles selon les répondants (34,6% et 46,1% respectivement). L'ébauche a aidé 92,3% des répondants à bien manger.

CONCLUSION : Les résultats permettront de développer un outil final adapté aux besoins des gens, et ce en vue de les aider à mieux s'alimenter. Les deux sections considérées les moins utiles ne seront pas maintenues.

TITRE : Analyse de la diète NPO aux unités de chirurgie de l'Hôpital régional Dr Georges- L.- Dumont (HRGLD)

AUTHORS: D Arsenault. Programme d'Internat en diététique, Hôpital régional Dr Georges-L.-Dumont, Moncton, Nouveau-Brunswick.

OBJECTIFS : 1) Déterminer le nombre de patients des unités de chirurgie qui reçoivent une diète NPO; 2) Déterminer le nombre de ces patients qui demeurent avec une diète NPO pour une durée de 5 jours ou plus; 3) Chez les patients ayant une diète NPO pendant 5 jours ou plus, déterminer la durée moyenne du régime et 4) Déterminer les raisons de la prescription d'une diète NPO pour une durée de 5 jours ou plus. **MÉTHODE :** Une collecte de données fut effectuée sur une période de 2 mois à l'aide du dossier du patient. **RÉSULTATS :** 242 patients ont reçu une diète NPO et 17 (7%) ont adhéré à cette diète pendant 5 jours ou plus. Chez les patients ayant une diète NPO pendant 5 jours ou plus, la durée moyenne du régime est de 6.5 jours. Les raisons connues de la prescription de la diète NPO pour 5 jours ou plus sont : la condition du patient (70,6%), le postopératoire d'une chirurgie (17,6%) et les examens diagnostics (5,9%). **CONCLUSION :** Les résultats indiquent que la majorité des patients des unités chirurgicales de l'HRGLD ont une diète NPO pour moins de 5 jours et une qu'une faible proportion (7%) a une diète NPO pour 5 jours ou plus, expliqué majoritairement par la condition du patient. Ces patients bénéficieraient d'un protocole de soins pour adresser leurs besoins hydriques et nutritionnels. De plus, ce protocole sensibiliserait les professionnels de la santé des effets d'un jeûne prolongé sur le rétablissement des patients.

TITRE : Évaluation de la consistance des purées de légumes et de fruits au menu de l'Hôpital régional Dr Georges-L.-Dumont (HRGLD)

AUTHORS: K Basque. Programme d'Internat en diététique, Hôpital régional Dr Georges-L.-Dumont, Moncton, Nouveau-Brunswick.

OBJECTIFS: 1) Évaluer la consistance, la viscosité, la dispersion et la synérèse des purées de légumes et de fruits du menu de l'HRGLD et comparer les résultats aux critères recherchés pour une purée sécuritaire, et 2) Évaluer la valeur nutritionnelle et le coût moyen d'un repas purée au menu actuel et comparer à une purée commerciale. **MÉTHODE:** Le test du *Spoonability* a évalué la consistance et la viscosité tandis que le *Line Spread Test* a évalué la dispersion et la synérèse. La moyenne de trois mesures a été retenue pour chaque test. La valeur nutritive des purées maison a été analysée à l'aide du logiciel Food Processor version 8.8.0 et celle de la purée commerciale a été obtenue du fabricant. Le coût des aliments a été calculé à partir des contrats en vigueur. **RÉSULTATS:** Vingt-cinq purées (16 légumes et 9 fruits) ont été évaluées. Quatorze purées de légumes (87%) et 8 purées de fruits (89%) n'ont pas rencontré les critères recherchés. La valeur nutritionnelle de la purée commerciale se compare à celle de la purée maison en termes de calories, protéines et fibres. La purée commerciale contient plus de sodium (162 mg) et de lipides (4,25 g) que la purée maison, quoique les valeurs respectent les recommandations nutritionnelles. Un repas de purée maison coûte 0,75\$ de moins qu'un repas de purée commerciale. **CONCLUSION:** La consistance des purées de fruits et de légumes maison au menu des patients de l'HRGLD ne respectent pas les critères recherchés pour une purée sécuritaire. L'achat de purées commerciales pourrait répondre aux critères recherchés sans occasionner de coûts significativement plus élevés.

TITLE: Dietary vitamin D intake of elderly residents living in the Aging and Veteran's Care facility at Sunnybrook Health Sciences Centre

AUTHORS: C Denda, K Hall, M Morris, H Yeung. Sunnybrook Health Sciences Centre Dietetic Internship Program, Toronto, Ontario.

OBJECTIVES: To assess the dietary intake of vitamin D from dietary and supplemental sources among elderly residents in Sunnybrook's Aging & Veteran's Care facility and make recommendations regarding vitamin D supplementation. **METHODS:** The vitamin D content from all sources provided to and consumed by residents was calculated and compared to the daily recommended intake (DRI) of 600 IU. Vitamin D was calculated using the Canadian Nutrient File, manufacturer information, a vitamin D foods table (Merck Frosst, 2008) and product labels. Three-day tray audits were completed for all meals and snacks, including nutritional supplements. Charts were reviewed for micronutrient supplement orders and diagnoses. Total daily and three day vitamin D intake was calculated for each resident and the total sample. **RESULTS:** The daily average vitamin D available to and consumed by residents (N=30) was 414 IU and 295 IU, respectively. Those who were provided with nutritional supplements received an average of 480 IU and consumed 357 IU, while those without on average received 245 IU and consumed 207 IU. Vitamin D supplementation varied in amount prescribed from >600 IU (43% of residents), <600 IU (30% of residents) to no supplementation (27% of residents). Of the residents, 33% had a diagnosis of osteoporosis, osteoarthritis, falls, or fractures. **IMPLICATIONS & CONCLUSIONSS:** None of the study participants met the recommended DRI of 600 IU and on average, only 71% of the DRI was met. The results of this study suggest that all AVC residents require vitamin D supplementation of at least 400 IU to achieve the current DRI of 600 IU.

TITLE: Is there a relationship between acne and diet?

AUTHOR: C Sadler. Southeastern Ontario Dietetic Internship Program, Kingston, Ontario

OBJECTIVES: Foods such as chocolate, French fries and soda pop are often linked to higher rates of acne. The purpose of this study was to see if there is evidence that dietary factors are related to acne, using the following five questions: 1) Does eating chocolate cause or worsen acne?, 2) Does a higher carbohydrate, especially sugar intake cause or worsen acne?, 3) Does a low glycemic-load diet improve or prevent acne?, 4) Does dairy intake cause or worsen acne in adolescents?, and 5) Does zinc status affect acne and if so, what is the treatment? **METHODS:** An extensive literature review was conducted using Ovid, PubMed and ProQuest. Twelve research studies were found, from 1936-2007 looking at chocolate, high sugar or refined carbohydrate, glycemic index, dairy intake or zinc status. Articles were evaluated and evidence was graded using criteria from Dietitians of Canada's PEN (Practice-based Evidence in Nutrition) resource. **RESULTS:** Some of the strongest evidence that diet may play a role in acne comes from observing non-westernized societies. They have virtually no acne until adaptation to a westernized diet, characterized by higher processed and high glycemic index foods. Chocolate, perhaps most often blamed, has no science to support its avoidance. Some studies suggest dairy causes acne, but self-reported data was used, limiting credibility. Low zinc status may cause acne but it may be an indirect relationship. **IMPLICATIONS & CONCLUSIONS:** Although there is a potential relationship between dietary factors and acne, more quality research is needed to make any definite conclusions.

TITLE: Can these people afford to eat well?: An evaluation study

AUTHOR: K Reid, Southeastern Ontario Dietetic Internship Program, Kingston, Ontario

OBJECTIVE: “Can these people afford to eat well?” is a resource developed and distributed by Kingston, Frontenac, and Lennox & Addington Public Health (KFL&A). It is a tool to inform agencies, groups and politicians in KFL&A about the challenges of eating well and living well on a low income. It presents food, housing and other living costs relative to various levels of income. Food costs are based on the Government of Ontario’s Nutritious Food Basket, a mandated annual data collection activity. The purpose of this evaluation study is to determine how the resource can best meet recipients’ advocacy needs.

METHODS: A review of the current literature regarding the nutritious food basket, food security and advocacy was conducted. A survey was developed and sent out to 33 past users representing a variety of perspectives. Respondents were encouraged to answer the questions through a telephone interview, with the option of filling it out independently. Results were tabulated and presented to an advisory committee that recommended revisions and additions to the resource. A revised copy will be redistributed to respondents to evaluate the acceptability of changes. The annual production cost of this advocacy tool was also considered.

RESULTS: There were 18 survey respondents, a 55% response rate. Results of the final evaluation are pending. **IMPLICATIONS & CONCLUSIONSS:** The results and recommendations of this evaluation study will be used by KFL&A Public Health to determine the benefits of the content of this advocacy tool and how best to distribute it. This kind of work is evidence of the partnerships, collaboration and advocacy competencies for public health practitioners as described by the Public Health Agency of Canada.

TITLE: Menu planning at childcare facilities: a toolkit for childcare providers.

AUTHOR: S Leavitt. Southeastern Ontario Dietetic Internship, Port Hope, Ontario.

OBJECTIVE: To meet the nutrition resource needs of childcare facilities (CFs) in the Haliburton, Kawartha, Pine Ridge District Health Unit. **METHODS:** The project contained four phases: assessment, planning, implementation, and evaluation. The assessment phase used an interview guide based on the Adult Learning Model. Interview data from nine CF directors was analyzed using open coding and a framework analysis. The planning phase involved planning the content of a menu planning toolkit. The content was developed by: 1) Adapting similar materials from other Ontario Health Units; and 2) a review by key informants. Implementation involved mailing the toolkit to five CF directors. The directors are participating in the formal evaluation. The pre-toolkit menus were evaluated based on the following five indicators: 1) meals include four food groups; 2) meals include two choices from fruit and/or vegetables; 3) snacks include at least two food groups; 4) 50% of grain products are whole grain; 5) 100% fruit juice served no more than a half cup per day. CFs will have six weeks to use this new tool. Post-toolkit menus will be evaluated on the same five indicators. The pre- and post-toolkit results will be compared. CF directors will also participate in a telephone interview using open ended questions to determine the usefulness of the toolkit and gather suggestions for improvement. The interview evaluation data will be analyzed by open coding methods and thematic analysis. **RESULTS:** A menu planning tool was found to be the highest of CF directors' self-prioritized needs. Evaluation results of the toolkit pending. **IMPLICATIONS & CONCLUSIONS:** This project reinforces the value of including the end-user throughout the entire tool development process. It demonstrates the client-centred approach at a population health level.

TITLE: Nutritional care of patients with high risk for skin breakdown and a nutritional deficit at Queensway-Carleton Hospital

AUTHORS: V Cheng, T Williamson, T Cornick. The Ottawa Hospital Dietetic Internship, Ottawa, Ontario

OBJECTIVES: The objectives of this study were (1) to determine whether dietitians are being referred for consultation to provide nutritional care for patients with high risk for skin breakdown and (2) to describe the nutritional intervention currently implemented for these patients. **METHODS:** Data collection was completed between November and December 2007. The sample included in this project was chosen by cluster sampling. This includes reviewing the charts of all inpatients in the Medicine, Surgery, Alternative level of Care, Geriatrics and Rehabilitation unit at a given time. The variables explored included the presence and reason for dietitian consultation, the presence of the implementation of protein, fluid, vitamin (A, C) and mineral supplement (zinc), strategies to increase energy intake (oral, enteral and parenteral feeding) and food records. **RESULTS:** Of the 147 charts reviewed, 42 (28.6%) patients were deemed high risk for skin breakdown and at a nutritional deficit based on their documented Braden score. Of these high risk patients, 21 (50.0%) patients received dietitian consultation. Upon referral, patients received nutrition interventions including caloric, protein, vitamin and mineral supplementation. **IMPLICATIONS & CONCLUSIONS:** When dietitians were consulted, patients were assessed and were provided most often with nutritional interventions and met the wound care prevention and treatment guidelines. This study found that only 21 (50%) of such patients were referred. Consequently, high risk patients may not be receiving appropriate nutritional care which could result in the development of pressure ulcers or delayed wound healing.

TITLE: The Effects of Inulin (Benefibre®) on Delayed Bowel Function in Enterally Fed Post-Operative Cardiac Surgery ICU Patients: A Pilot Study

AUTHOR: M Maniatis, E Mills, H Harrington, L Knechtel, M Morris, A Ho. Sunnybrook Health Sciences Centre, Toronto, Ontario.

OBJECTIVES: This prospective, randomized, controlled pilot study investigated the effects of inulin on bowel function and progression of bowel routine orders beyond administration of docusate sodium on enterally fed post-operative cardiac surgery patients in the Cardiovascular Intensive Care Unit (CVICU) as measured by timing of first bowel movement post-op, frequency of bowel movements, and frequency of bowel routine orders. **METHODS:** Post-operative cardiac surgery patients in the CVICU were started on enteral feeds within 24-48 hours of ICU admission (post-op day 1-2), as per standard practice. Patients were randomly assigned to either the control or intervention group. The control group received TraumaCal®, a fibre-free enteral formula, and the intervention group received TraumaCal® and Benefibre®, a fibre (inulin) supplement in powder form. **RESULTS:** At the end of the data collection period, three participants had been admitted into the study. However, due to exclusion criteria, only one participant remained in the sample. **IMPLICATIONS & CONCLUSIONS:** Due to the small sample size, conclusions could not be drawn. The need to repeat this study with a larger sample size is indicated. The 2007 Canadian Clinical Practice Guidelines for Nutrition Support in Mechanically Ventilated, Critically Ill Adult Patients indicate that there is currently insufficient research to support the routine use of fiber in enteral feeding for critically ill patients. Delayed bowel movements may potentially compromise feed tolerance and adequate nutritional intake. Inulin has been shown to increase stool frequency in healthy patients with delayed bowel movements. Therefore, it is important to examine the effect of inulin in this population.

TITLE: Developing a formative evaluation for a diet and behaviour intervention for adults with moderate to high cardiovascular disease risk in a rural community health centre.

AUTHOR: A Wales. Southeastern Ontario Dietetic Internship Program, Kingston, Ontario.

OBJECTIVES: A formative evaluation provides a framework to assess the effectiveness of a program. The purpose of this type of evaluation is to examine the extent of the program reach, to determine the degree that target population needs are met, to review program design and delivery, and to assess outcomes. The program of interest, the Nutrition for a Healthy Heart Program (NHHP), is a diet and behaviour intervention with the goal of reducing cardiovascular disease (CVD) risk in program participants. The NHHP includes a group workshop and three follow-up individual counselling sessions with a Registered Dietitian.

METHODS: The manual for evaluating heart health projects from the Heart Health Resource Centre (HHRC) was used to determine the tools needed to create a formative evaluation of the NHHP. Evaluation tools were developed from tested or previously validated resources. These tools span the entire evaluation process, from the initial step of identifying client and program needs, to data collection tools for measuring program outcomes. **IMPLICATIONS &**

CONCLUSIONSS: The benefit of planning the evaluation during the initial stages of program development is to improve the quality and efficiency of the program. This project can provide an evaluation plan and tool kit for the NHHP facilitator that will measure the extent to which process and outcome objectives are being met. Implementation of this evaluation plan will identify whether the program is addressing a need, reaching the target population, offering desired knowledge and skills, and producing intended outcomes. Not only can it reduce duplication of work, its implementation will provide results for accountability and monitoring purposes.

TITLE: Healthy eating does not cost more for First Nation people living on reserve

AUTHOR: J Tetreault, The Ottawa Hospital Dietetic Internship Program, Ottawa, Ontario

OBJECTIVES: In many First Nation communities there is a perception that healthy eating is expensive, resulting in the purchase of more calorie-dense and nutrient poor foods. The primary objective of this project was to compare the cost of eating nutritious food with the cost of eating less nutritious food in First Nation communities. The second objective was to evaluate whether there is a geographical impact on the cost of eating nutritious food. **METHODS:** First Nation communities in Ontario (n=4) were selected based on location (urban south, urban north, rural and remote). In each community, the on-reserve or nearest off-reserve grocery store was visited, where the cost of selected nutritious and less nutritious food was collected. Five day nutritious and less nutritious meal plans were created for three individuals (child aged 9-13, adult female and adult male aged 19-50). The costs of the nutritious and less nutritious meal plans for each location were evaluated using t-tests and ANOVA. **RESULTS:** The cost of the nutritious meal plans was significantly lower than the less nutritious meal plans ($p < 0.01$) for the three individuals in all four locations. For example, the average daily cost of eating healthy for a child was \$3.56, \$4.45, \$5.07 and \$8.92 in the four locations (in the aforementioned order), whereas eating less nutritious food cost on average \$5.52, \$6.38, \$7.23 and \$16.36 a day respectively. In general, the cost of eating nutritious foods in the remote location was 50% more expensive, and eating less nutritious food was 55% more expensive, than in the rural location. **IMPLICATIONS & CONCLUSIONSS:** Nutritious foods can be found at lower costs than less nutritious foods on First Nation reserves. This has important implications for food security and food choices among this population.

TITLE: Improving patient satisfaction through food preferences for a non-selective hospital menu

AUTHORS: E Vautour and TM Lomond, The Ottawa Hospital Dietetic Internship Program, Cornwall, Ontario.

OBJECTIVES: To provide patients with the opportunity to communicate food preferences to the foodservice department in order to improve patient satisfaction with regards to a non-selective hospital menu. **METHODS:** A patient satisfaction survey, measuring seven variables relating to food quality and quality of service, was distributed to two groups. Group 1 (n=31) did not have the opportunity to communicate food preferences to foodservices, while Group 2 (n=9) did have the opportunity to communicate food preferences to foodservices prior to the survey. Food preferences were collected using a food preference form and implemented for all subsequent meals prior to distributing the satisfaction survey to Group 2. Each of the seven variables on the patient satisfaction survey was compared using the Mann-Whitney U-test. **RESULTS:** Patient satisfaction in relation to food temperature was significantly higher ($p=0.035$) for Group 2, which did have the opportunity to communicate food preferences. There was no significant difference in patient satisfaction for the other six variables that were measured. **IMPLICATIONS & CONCLUSIONSS:** Allowing patients to communicate food preferences to foodservices through the use of a food preference form may not be sufficient to increase patient satisfaction with regards to foodservices for a non-selective hospital menu. However, conclusions are limited by the small sample size of Group 2. Despite these conclusions, it may still be beneficial to have a food preference form readily available for those patients who wish to communicate food preferences to foodservices.

TITLE: A survey of perceptions of food intolerances and food related complication in individuals with ostomies

AUTHORS: K Jamieson, R Poulton, C Keller, H Machnee. Saskatoon Health Region Dietetic Internship Program Saskatoon, Saskatchewan.

OBJECTIVES: A lack of evidence based knowledge exists for dietary guidelines provided to patients undergoing ostomy surgeries. The majority of evidence existing in this area is based on anecdotal information. Unnecessary food avoidance in ostomy patients may have negative effects on nutritional status. Therefore it was hypothesized individuals with ostomies can consume a liberal diet based on Canada's Food Guide to Healthy Eating with additional recommendations to encourage sodium, potassium, water intake and adequate mastication with no effect on the incidence of food intolerances. **METHODS:** 13 participants, male and female, aged 18-75 years who were undergoing ostomy surgery were recruited from surgical units in the Saskatoon Health Region. Patients were randomly assigned into either the control or treatment group. The control group was instructed on standard ostomy dietary guidelines specific to the type of ostomy the patient received. The treatment group received the revised dietary guidelines based on Eating Well with Canada's Food Guide with proper mastication and recommendations for potassium, sodium and fluid. The treatment group was not instructed to restrict any foods. Telephone questionnaires were completed approximately 4-6 weeks post surgery. **RESULTS:** Interpretation of data from 4-6 week interviews was limited, as the study has not been unblinded due to study incompleteness. However, it was found that the majority of participants restricted food for various reasons, including medical conditions and advice from other health professionals. None of the participants interviewed experienced stomal obstructions and very few had any episodes of constipation. Responses regarding other side effects studied were variable between participants. **IMPLICATIONS & CONCLUSIONS:** This study provides evidence that food restrictions are common in patients undergoing ostomy surgery even without sound scientific evidence to support reasons for including these food restrictions in dietary guidelines.

TITLE: Potential risk factors for development of necrotizing enterocolitis or feeding intolerance in infants born at or before 28 weeks gestation.

AUTHORS: C Burnouf, A Cossette, L Mund, N Haskey. University of Saskatchewan, College of Pharmacy and Nutrition Professional Practice, Saskatoon Health Region, Saskatoon, Saskatchewan.

OBJECTIVES: Necrotizing enterocolitis (NEC) is a common problem in neonatal intensive care units but its etiology remains debated. Mode of delivery has not been fully investigated, yet it may influence the development of feeding intolerance and NEC. The purpose of this study was to investigate if the mode of delivery (C-section or vaginal) influences the risk of feeding intolerance in infants of ≤ 28 weeks gestation and to determine if nutrition risk factors may predispose infants born ≤ 28 weeks gestation to feeding intolerance or NEC. **METHODS:** A retrospective chart review of 30 infants born ≤ 28 weeks gestation admitted to the Saskatoon Health Region Neonatal Intensive Care Unit was completed. **RESULTS:** A total 30 medical records were reviewed. Two were eliminated from the sample due to inadequate chart information or not meeting the inclusion criteria. 32% of the subjects developed feeding intolerance and 14% of the subjects subsequently developed NEC. Risk factors for feeding intolerance were delivery by C-section (67%), extremely low birth weight (67%) and early introduction of formula (day 2 in feeding intolerant group vs. day 8 in controls) and total number of days on total parenteral nutrition (TPN) (24 days in feeding intolerant group vs. 13 days in controls). **IMPLICATIONS & CONCLUSIONS:** Preliminary results indicate that mode of delivery, birthweight, early introduction of formula and total days receiving TPN may increase the risk of developing feeding intolerance. This study is on-going, as more infant charts are analyzed, more conclusive findings will be revealed.

TITLE: Impact of post-discharge nutrition practices of the Northern Alberta Neonatal Intensive Care Program Level II Nurseries on growth rates of premature infants.

AUTHORS: K Sowak, K Brunet, D Ridley, D Mager, Capital Health Dietetic Internship Program, Edmonton, Alberta.

OBJECTIVES: Preterm infants have increased nutritional needs for growth and development. Current guidelines in the Capital Health Region for infants born less than 34 weeks and/or less than or equal to 1800 grams is to recommend either supplementation of breast fed infants with post discharge formula or the use of a post discharge formula in formula fed infants until 3 months corrected age (CA). The purpose of this study was to review the impact of current nutrition discharge recommendations for premature infants and to compare growth rates of infants fed post-discharge formula, expressed breast milk or a combination of both after being discharged from the Northern Alberta Neonatal Intensive Care Program Level II Nurseries at the Royal Alexandra, Misericordia or Grey Nuns Hospitals and followed by Capital Health's Neonatal and Infant Follow-up Clinic. **METHODS:** We conducted a retrospective chart review of premature infants born less than 29 weeks gestation and/or less than 1250 grams who were discharged from the Northern Alberta Neonatal Intensive Care Program Level II Nurseries (June 1 2004-Mary 31, 2005; n=88) and followed by the Neonatal and Infant Follow-up Clinic. Weight, length, and head circumference were collected at birth, time of discharge from hospital and at 6, 18 months corrected age and 3 years of age. **RESULTS:** Eighty-eight infants were included in the study. There were 47 males and 41 females, as well as, 50 singletons and 38 multiples. The mean gestational age of subjects was 27 weeks with an average birth weight of 994g +/-211 (45th percentile +/-29), birth length of 35.5cm +/-2.8 (37th percentile +/-30) and a birth head circumference of 25.5cm +/-1.8 (47th percentile +/-28). **IMPLICATIONS & CONCLUSIONSS** It is expected that preterm infants discharged on post-discharge formula or supplemented breast feeding will have improved growth over those discharged on term formula or breastfeeding alone. Understanding the impact of current post-discharge recommendations on the growth of preterm infants is critical to ensure optimal growth in a high risk population.

TITLE: A comparison of the cost benefits of tray versus bulk service in a long term care setting

AUTHOR: K Berena. ARAMARK Dietetic Internship Program, Inuvik, NT.

Objectives: To compare tray versus bulk service in terms of temperature, satisfaction, waste and staff labour to determine which of the two service styles would benefit residents and food service managers in a long term care (LTC) setting in Inuvik, NT. **METHODS:** Each service style was evaluated on these variables during tray service (pre-implementation) and after bulk service implementation (post-implementation). All data was then compared. **RESULTS:** The results show bulk service improved temperatures by an average of 14°F. Residents preferred bulk service in terms portion size, presentation, quality, timing and overall satisfaction. LTC nursing staff thought bulk service only improved portion sizes and timing of service. Food service day staff thought timing and quality improved with bulk service but preferred tray service in terms of workload and overall satisfaction. Bulk service produced less waste when compared to tray service waste. The labour time per meal for bulk service was 1.83 min/meal whereas tray service took 3.46 min/meal. **IMPLICATIONS & CONCLUSIONS:** The report supports past research that deemed bulk service superior to tray service in terms of resident overall satisfaction and waste. Additional findings in this research showed temperature, when measured objectively, improved post-implementation as did staff labour time spent on preparation and service. Perhaps LTC facilities in small communities similar to Inuvik would benefit from switching to bulk service. Investigation on alternative methods of bulk service may be warranted to improve food service staff perception of workload. In conclusion, the research supports previous work in that bulk service improved meal satisfaction and temperature. The research also concludes bulk service can achieve food service management goals i.e. Reduce labour time and waste.

TITLE: Dietary intake in the home care client with chronic wounds

AUTHORS: A Wojcik, D Mager, M Atkins, A Andrews, K Beausoleil, G Nagal, C Schnek. Capital Health Dietetic Internship Program, Edmonton, Alberta.

OBJECTIVES: Pressure ulcers (PU) and venous stasis ulcers (VSU) commonly occur in the home care setting and poor nutrition can impact an individual's ability to heal from both. This study aimed to determine the relationships and trends in macro and micronutrient status through assessment of home care clients' dietary intake, body composition and wound severity. **METHODS:** Subjects (n=16) greater than 18 years of age having PU's (n=9), VSU's (n=5) or both (n=1) participated in this cross-sectional pilot study. Variables studied included height, weight, waist circumference, mid-arm circumference, tricep skin fold and knee-ankle height. Three day food intake records were analyzed using the Food Processor SQL 10.0.0 program and Eating Well with Canada's Food Guide (EWCFG). **RESULTS:** Nine subjects supplemented their intake with either vitamin/mineral supplements (n=4), caloric supplements (n=2), or both (n=3). Clients with VSU's had a higher weight, body mass index, waist circumference and wound severity score. Interim analysis found that without supplementation, 44% and 25% of wound care clients did not meet their caloric and protein requirements, respectively. Without supplementation, the following nutrients on average were below (<97.5%) the Recommended Dietary Allowance (RDA): fat, fiber, vitamins B6, D and K, folate, calcium, zinc, magnesium, and potassium. With supplementation, fiber, magnesium and potassium were below the RDA on average. The mean intake of food group servings did not meet the recommended amounts from EWCFG. **IMPLICATIONS & CONCLUSIONS:** Optimal nutritional status will help provide an environment conducive to wound healing. Clients below the RDA may be at increased risk for nutrient deficiencies and may require the optimizing of nutritional status through diet and/or supplementation.

TITLE: Bone Mineral Density in Pediatric Cystic Fibrosis Patients

AUTHORS: D Nielsen, C Kitscha, D Mager, Capital Health Dietetic Internship Program, Edmonton, Alberta.

OBJECTIVES: Metabolic bone disease is prevalent in children and adults with Cystic Fibrosis (CF). The pathogenesis of metabolic bone disease in CF is likely multi-factorial. The purpose of this study was to determine the prevalence of metabolic bone disease in children with CF and to determine factors contributing to low bone mineral density in this population. **METHODS:** A retrospective chart review (n=103) was conducted in pediatric patients (5 - 18 years) diagnosed with CF attending the CF Clinic in the Stollery Children's Hospital between January 2000 and January 2008. Thirty nine patients had data from at least one DEXA scan. Bone mineral density (BMD) and bone mineral content (BMC) was measured using Dual Energy X-ray Absorptiometry (Lunar Prodigy). **RESULTS:** Mean (range) age, height Z score and weight Z score at time of DEXA was 9.5 years (5.1 - 16.4); -0.5 (-2.47 - 1.33); and -0.3 (-3.14 - 2.1), respectively. 43.6% (17 out of 39) of patients were heterozygous for dF508, 46.2% (18 out of 39) were homozygous for dF508. All but one patient were pancreatic insufficient, 4 had CF related liver disease and 1 had CFRD. Mean (range) FEV₁% predicted was 87.6% (26% - 143%), indicative of mild lung disease. 20.5% of patients (8 out of 39) had at least one BMD Z score indicative of Osteopenia or Osteoporosis; low bone mineral density was observed in both adolescents and pre-pubescent children. Mean BMD was lower in patients below 90% of ideal body weight (p = 0.001). Multivariate analysis indicated a strong correlation between BMC and bone surface area (BSA) (p<0.001), age at DEXA (p=0.008), vitamin E (p<0.001) and K (p=0.03) dose (r²=0.98). When subjects were classified according to FEV₁% predicted <60%, 60 - 79% and >80%, vitamin K dosing did not remain significant (r²=0.99). **IMPLICATIONS & CONCLUSIONS:** Low bone mineral density was found in pre-pubescent children with CF. Targeting strategies for prevention of low bone mineral density (BMD) in children as young as 5 years of age may help to decrease prevalence of low BMD and prevent risk for bone fractures later in life; %IBW and FEV₁ may be useful as screening parameters.

TITLE: Knowledge of diet and exercise among women with lymphedema

AUTHOR: W Anderson, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVES: Women with lymphedema are often misguided about unnecessary diet restrictions and physical activity limitations. The objectives of the project were to: (1) Determine the perceptions of women with lymphedema clients at the Breast Health Centre (BHC) in Winnipeg regarding diet and exercise (2) Determine what information other centers in Canada provide to clients and (3) Establish if evidence-based guidelines exist regarding diet and exercise for lymphedema management. **METHODS:** 112 clients at the BHC and 24 Canadian breast health centers were surveyed via email, fax, mail, and telephone. An evidence-based literature review was conducted. **RESULTS:** 11 breast health centers and 69 client responses were collected. 69% of clients were not given information on exercise although most clients believed that diet and exercise can improve lymphedema; 78% were active while 20% believed that activity can improve lymphedema. A small percentage of clients (21%) believed sodium had an effect on lymphedema. Canadian centers promoted the maintenance of a healthy weight (24%), the slow progression of exercise (12%), and low risk activities such as swimming (10%). The lymphedema therapist was the primary source of both diet and exercise information. An evidence based literature review revealed that the best prevention and maintenance strategies include maintaining a healthy weight, eating a well balanced diet, and participating in regular slow-progressing exercise. **IMPLICATIONS & CONCLUSIONS:** Clients of the Winnipeg BHC feel that sodium restrictions, drinking water, a healthy diet, and weight loss can help improve lymphedema. Key messages from Canadian centers include maintaining a healthy weight, eating a well-balanced diet, avoiding diuretics and low protein diets and a slow progression with exercise, all of which are supported by the evidence based literature review.

TITLE: The preparation of modified infant feedings: are we following the guidelines?

AUTHORS: C Lannoo & S McCorrister, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

OBJECTIVES: The American Dietetic Association (ADA) document “Infant Feedings: Guidelines for Preparation of Formula and Breastmilk in Health Care Facilities” is a reference designed to improve clinical outcomes of infants requiring in-patient care. Adherence to these guidelines has implications regarding development, length of stay and long-term health of infants. The study objective was to determine if neonatal nursing staffs at Health Sciences Centre (HSC) and St. Boniface General Hospital (SBGH) were aware of, and following the ADA guidelines. **METHODS:** Nurses were surveyed to determine awareness of, adherence and barriers to implementation of the ADA Guidelines. Surveys were administered in person and returned anonymously. A retrospective review was conducted recording modified formula and powder versus liquid requests. A prospective observation viewed the process of preparing infant feeds. **RESULTS:** HSC survey response rate was 59% (n=20) and SBGH response rate was 49% (n=37). 30% and 65% of HSC and SBGH nurses, respectively, were aware of the ADA Guidelines. HSC neonatal nurses stated they follow 7 of the 8 guidelines at least half the time. At SBGH, 7 of the 8 guidelines are being met 60 - 78% of the time. Lack of a separate preparation room was the most common barrier to following the ADA Guidelines. A retrospective review at HSC showed that of 31 requests, 45% were for liquid additives and 55% for powdered additives. At SBGH, 55% of orders were liquid and 45% powder formula. Liquid alternatives were used whenever possible at both locations. **IMPLICATIONS & CONCLUSION:** Encouraging better knowledge of the ADA Guidelines and facilitating their use in neonatal settings will greatly reduce the risk to the infant.

TITLE: Among adult clients who have attended group nutrition education classes for type 2 diabetes, which meal planning method do they commonly use?

AUTHOR: D Klassen, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVES: The Youville Diabetes Centre (YDC) in Winnipeg, Manitoba is a community health centre that focuses on diabetes self management. As part of the education component, YDC currently teaches (1) carbohydrate counting (CC), (2) Idaho plate method (IPM) and (3) The Zimbabwe hand jive (ZHJ). The purpose of this project is to determine what meal planning method(s) are most commonly used by adults with type-2 diabetes mellitus after attending the education sessions at YDC. **METHODS:** 52 Clients who attended the two-part diabetes group education session between May 2, 2007 and December 3, 2007 completed a questionnaire through mail, phone call, or in-person. Clients answered questions on: meal preparation, learning modalities, and meal planning method(s) being used. **Results:** 58% of clients reported the use of more than one meal planning method. 81% (n = 42) of the clients cited the use of IPM either by itself or in conjunction with CC and/or ZHJ. CC and ZHJ were rarely used exclusively by the clients; 12% (n=6) and 4% (n=1), respectively. However, both methods are being used by close to half of the clientele surveyed: 44% CC and 52% ZHJ. **IMPLICATIONS & CONCLUSIONS:** Although a large number of clients use Idaho plate method, there is no one best meal planning method available. However a combination of meal planning methods seems to be most effective, primarily the specific combination of Idaho plate method and Zimbabwe hand jive. Future research on how personality/learning traits play a role in the selection of which meal planning method is used may be of interest.

TITLE: An assessment of the need for a workplace wellness weight management program

AUTHOR: J Vincent, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVE: Obesity is a global epidemic that costs employers more money each year in direct and indirect costs. Workplace wellness weight management programs have shown to have success in decreasing these costs to employers. The purpose of this study was to (1) Determine what types of programs are currently being offered at other health care facilities and (2) To provide suggestions for the Deer Lodge Center (DLC) in Winnipeg as to whether a wellness program should be implemented. **METHODS:** Members of the Clinical Nutrition Managers (CNM) were surveyed on current wellness programs offered at their facility. A separate survey was distributed to DLC staff to assess their interest in implementing a wellness program. Other wellness centers in Winnipeg (The Reh-Fit Centre and The Wellness Institute) were contacted and asked about past and current programs. **RESULTS:** The CNM network survey had a 70% response rate. Programs being offered at these facilities included nutrition seminars, physical activity classes, exercise facilities and staff challenges. Most programs had been in place for greater than 1.5 years and had a 10-60% participation rate. Staff covered most costs and programs were primarily led by outside professionals. There was a 1% response rate from the DLC staff survey. Respondents expressed an interest in a wellness program. It was suggested to have these programs be six to ten weeks in duration and have them offered on weekdays in the afternoon or early evening. **IMPLICATIONS & CONCLUSIONS:** Based on these results, the DLC should offer a workplace wellness weight management program to its staff. This program should be multi-component, supported by management and accommodate staff workload and daily schedule.

TITLE: Nutritional support for patients with hyperemesis gravidarum

AUTHOR: K Boyd, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

OBJECTIVES: This study was conducted to examine if there are specific practice guidelines or protocols in place for the initiation of enteral nutrition support for patients with Hyperemesis Gravidarum (HG) at the Women's Hospital at Health Sciences Centre (HSC) in Winnipeg. The knowledge and attitude of the obstetricians at the Women's Hospital towards enteral nutrition support were also evaluated. **METHODS:** A questionnaire was prepared and sent to all obstetricians at HSC (n=23). Charts coded for admission to HSC due to HG were retracted by the medical records department and reviewed using a prepared chart audit tool (n=60). **RESULTS:** Response rate of obstetricians that replied to the questionnaire was 39% (n=9). Over half of the participants agreed that enteral nutrition may be a practical treatment method for HG, but only one participant felt there was a need for standardization in treatment methods. Evaluation of 60 admissions, due to HG, from 2005 to 2007 revealed that the main method of treatment is antiemetics, IV rehydration and oral solids and liquids. A dietitian was consulted on 27% of the cases and there was a 28% chance of readmission. No charts provided data regarding the use of enteral nutrition support in these patients. **IMPLICATIONS & CONCLUSION:** Currently, there are no guidelines in place at the Health Sciences Centre Women's Hospital specific to the treatment of HG or for the initiation of enteral support. Although greater than 50% of obstetricians surveyed agreed that enteral nutrition is a practical treatment option in patients with HG, only 11% felt that there was a need for clinical practice guidelines.

TITLE: Knowledge of patients on hemodialysis towards controlling dietary phosphorous intake.

AUTHOR: K Lanauze, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVES: The objective of this research was to identify patient knowledge and attitudes toward controlling dietary phosphorus intake in order to discover barriers to, and make suggestions for, improvement of hemodialysis patient adherence to dietary phosphorus restrictions. **METHODS:** The study took place at the Sherbrook Centre Dialysis Unit (SCDU), Winnipeg. The participants were 75 English speaking, chronic outpatients, dialyzing at SCDU that were willing to verbally answer questions asked by the researcher. Information was obtained by a questionnaire consisting of mostly closed ended questions regarding patient knowledge and awareness of dietary phosphorus and blood phosphate level, feelings toward restrictions and desire to learn more about phosphorus, and social factors that may influence dietary adherence. **RESULTS:** Patients were found to be lacking in knowledge regarding phosphorus; 11% of patients were unsure if they adequately restricted phosphorus in their diet, 64% were unable to identify phosphorus-containing foods, and 71% could not name medical complications of high blood phosphate levels. Factors that influenced dietary phosphorus restriction compliance were family support (52% reported a lack of family support and 44% reported that they do not prepare their own meals), number of people in household, level of education and employment, monetary cost of adherence, knowledge of phosphorus and a lack of interest in learning about phosphorus with 60% of respondents reporting they did not want to learn more about controlling dietary phosphorus. **IMPLICATIONS & CONCLUSIONS:** Identifying who prepares meals in the home is critical to deliver appropriate nutrition education programs. Education for patients and their families will serve to reinforce nutrition information previously provided, inform those with a lack of dietary knowledge and possibly improve family dietary support.

TITLE: Long-term home enteral nutrition: is laboratory monitoring crucial to patient care?

AUTHOR: L Bahuaud, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVE: Individuals requiring Home Enteral Nutrition Support (HEN) are at increased risk of calorie and protein malnutrition, fluid and electrolyte abnormalities, and micronutrient deficiencies. It is unclear whether routine bloodwork would improve identification of these risks. The purpose of this study is to determine the frequency of laboratory abnormalities in HEN patients, and link these abnormalities to clinical symptoms. The results will be used to develop monitoring protocol, and may improve care provided by the Manitoba Home Nutrition Program (MHNP) to adult patients. **METHODS:** HEN patients attending a six to twelve month follow-up nutrition appointment were considered. Nutrition assessment included macro- and micronutrient adequacy, Subjective Global Assessment (SGA), and general anthropometric data. Dietary intake of vitamins A, C, D, E, B12 and folate, and minerals Ca, P, Mg, Fe, I, and Zn were compared to DRI and RNI values. Bloodwork assessed included Hgb, Na, K, Cl, Urea, Cr, Ca, Mg, PO₄, and Alb. **RESULTS:** Of twelve participants, three were identified at risk of calorie malnutrition and two were at risk of protein malnutrition; four participants were identified at risk of electrolyte abnormality, and 50% were confirmed as dehydrated based on bloodwork. Of the eight patients identified at risk of micronutrient deficiency, one was confirmed deficient by the corresponding bloodwork. Patients supplementing oral intake with HEN are at greater nutritional risk than patients entirely using HEN or oral intake. In addition, patients with gastrointestinal motility and neurological disorders are at greater nutritional risk than patients with cancer. **IMPLICATIONS & CONCLUSIONS:** This prospective study demonstrates that laboratory data may be useful in select patients when used together with anthropometric and physical assessment at follow up.

TITLE: Assessing the adequacy of Deer Lodge Center's rehabilitation and assessment tool.

AUTHOR: L Back, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVES: At the Deer Lodge Center (DLC) in Winnipeg, the dietitian's initial assessment determines the patients to be at mild, moderate, or high risk for malnutrition. As a means of streamlining services, patients may be discharged from the dietitian's case load if the risk is mild to moderate. The objectives of this project were: (1) To determine if patients at DLC screened as requiring on-going nutrition intervention actually require this level of service; (2) To determine overall impact of streamlining services on nursing staff and patient care; and (3) To determine if the DLC assessment tool effectively captures patients at various nutrition risk levels. **METHODS:** A total of 72 patient charts were reviewed during December, 2007, using an auditing tool to gather appropriate data. The DLC assessment tool was compared to the validated Subjective Global Assessment tool to determine its ability to effectively capture patients at various levels of nutrition risk. **RESULTS:** All patients were initially assessed by the dietitian. Only 11% of patients (n=8) required referrals made by nursing staff to clinical nutrition services at some time point following the initial assessment. The need for referral was based on clinical assessment, patient requesting nutrition education and/or poor intake/appetite. Only 1 of the 8 referrals was made by a mild or moderate nutrition risk patient. **IMPLICATIONS & CONCLUSIONS:** Patients at DLC, who are assessed as requiring on-going nutrition intervention, do require this level of service, indicating the effectiveness of the DLC nutrition screening tool. Streamlining of services has had limited to no impact on nursing staff or patient care, and limited to no nutrition risk exists for the mild to moderate nutrition risk patient.

TITLE: Is calcium fortification vital for residents in long term care?

AUTHOR: A Fitzsimmons, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

OBJECTIVES: Deer Lodge Center (DLC) in Winnipeg is a long-term care and rehabilitation facility in Winnipeg. Residents are mostly elderly with conditions that may have nutritional implications, one being osteoporosis. Although adequate milk products are provided, residents may not be consuming adequate calcium and therefore, calcium fortification of foods may be warranted. The purpose of this project was (1) to determine milk intake of residents (2) to determine if other facilities are fortifying foods with calcium and (3) to investigate the feasibility and palatability of using skim milk powder (SMP) as a means of calcium fortification. **METHODS:** A 24 hour audit of milk intake was completed using a plate waste audit (n=231 trays). Surveys were distributed to long term care dietitians in Canada via email (n=547 dietitians) to assess if calcium fortification is being used. Cream soups were sampled by residents (n=51) with varying amounts of SMP (20-40 grams) and palatability was rated. **RESULTS:** Approximately 50% of residents at DLC do not drink the milk provided on their meal trays. The survey response rate was 13% (n=6 surveys) and indicated that no calcium fortification plan was currently being used in other facilities. It was found that 50% preferred the cream of vegetable soup and 80% preferred the cream of cauliflower soup with added SMP. The amount of SMP that was acceptable was 35 mg per 6 ounces of cream soup. **IMPLICATIONS & CONCLUSIONS:** Residents at DLC may not be consuming all the milk provided to them. The addition of 35 g of SMP to cream soup is a simple, cost efficient and palatable means of fortifying the diet of residents in long term care.