

Canadian Foundation for Dietetic Research

Dietetic Research Event – June 04–06, 2015

Bonjour! Welcome to Québec City, the capital of the province of Québec. This historic city was the host of the 2015 Dietitians of Canada Annual Conference. The submissions for this year's Canadian Foundation for Dietetic Research event represented the diversity of dietetic research conducted within Canada. Through the support of Dietitians of Canada and the Canadian Foundation for Dietetic Research, the 2015 event was both an exciting and informative exchange of research and experience-sharing efforts that inspired attendees.

The topics highlighted from this year's abstracts include Community-Based Nutritional Care, Wellness and Public Health—Children, Determinants of Food Choice, Dietary Intake, Nutrition Health and Education, Dietetic Practice and Education, Clinical Research and Patient Service, Nutrition Social Media and the Web, Nutrition Labelling and Patient Services. Each presenter provided an 11 minute oral presentation (8 minutes for presenting and 3 minutes for questions). This allowed for meaningful interaction between the presenters and those attending the sessions. This year we had over 50 presentations. These presentations offer the newest insights into important research findings that you may be able to apply to your own practice.

This Research Event would not be possible without the commitment and dedication of many people. On behalf of Dietitians of Canada and the Canadian Foundation for Dietetic Research, I would like to extend a special thank you to the 2015 Abstracts Review Committee who represented research, clinical nutrition, community nutrition, and education: Jennifer Brown (Registered Dietitian, The Ottawa Hospital Weight Management Clinic and Bariatric Surgery Program), Marketa Graham (Public Health Dietitian, Ottawa Public Health Unit), Mahsa Jessri (PhD Candidate, Faculty of Medicine, University of Toronto), Hélène Lowell (Nutrition Advisor, Health Canada), and Joseph Murphy (Professional Practice Co-ordinator, The Ottawa Hospital). I would also like to thank all of our moderators who took the time during the conference to keep our research presentation sessions on time. A special thank you to Shilpa Mukund and Greg Sarney at the Canadian Foundation for Dietetic Research for their assistance, patience, and support throughout the review process.

I enjoyed interacting with many of you at the oral research presentations where we highlighted the findings from our dietetic colleagues across our country.

Marcia Cooper, PhD, RD
Chair, 2015 Abstracts Review Committee
Health Canada

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These abstracts represent research projects of dietitians that were accepted through a peer-review process for presentation.

*Indicates the presenter

[R] = Research abstract

[E] = Experience-sharing abstract

ORAL RESEARCH PRESENTATION ABSTRACTS DC CONFERENCE-QUEBEC CITY 4–6 JUNE 2015

CLINICAL RESEARCH (INCLUDING OUTCOMES OF INTERVENTION)

Behavioral feeding problems of normally developing children under 4 years of age

Julia Stanislavskaia, RD, MScFN^{*1,2,3}; Colleen O'Connor, RD, PhD⁴, Alicia C. Garcia, PhD, RD, CFE⁵, Glenn Berall, MD, FRCPC, MBA⁶. ¹Division of Food and Nutritional Sciences, Brescia University College, the University of Western Ontario, London, ON; ²Taddle Creek Family Health Team, Toronto, ON; ³Infant Child and Adolescent Nutrition Clinic; ⁴Division of Food and Nutritional Sciences, Brescia University College, the University of Western Ontario, London, ON; ⁵Division of Food and Nutritional Sciences, Brescia University College, the University of Western Ontario, London, ON; ⁶Infant Child and

Adolescent Nutrition Clinic; North York General Hospital, Hospital for Sick Children, University of Toronto, Athabasca University, Holland Bloorview Kids Rehabilitation Hospital [R]

Objectives: It is estimated that 25%–45% of normally developing children experience feeding difficulties of varying severities with variable health outcomes such as faltering growth and psychological complications. The management of feeding difficulties in childhood is poorly understood. One objective of the study was to identify common problematic behaviours of normally developing children, less than four years of age, who were referred to a specialized clinic where feeding issues are addressed. Another objective was to determine associations between responsiveness to treatment and number of presenting problematic behaviours and clinic visits.

Methods: Secondary data was collected retrospectively from 106 medical charts of patients seen over the last five years. Data included age, gender, anthropometric measures, all medical history, dietary history and all feeding-related behaviours. Patients who demonstrated clinical improvements within first four appointments were categorized as responsive, those with no progress by fourth appointment were considered non-responsive and thus a more complex case. Data abstraction sheets were completed by trained researchers. Data analysis included two-tailed *t*-tests to determine the association between responsiveness to treatment and the number of problematic behaviours, frequency of visits to the clinic, presence of a medical condition and weight.

Results: There were statistically significant differences between the responsive and non-responsive groups in the total number of problematic behaviours ($P < 0.0001$), specific problematic behaviours, total number of visits ($P < 0.0001$) and presence of concurrent medical condition ($P < 0.0001$).

Implications and Conclusions: It is useful to establish better definitions of responsive cases of feeding difficulties as they differed significantly from the non-responsive group. Using the number of problematic behaviors and clinic visits may help determine the severity of the cases. The study addressed gaps in the literature by characterizing the target population, acquiring data to better establish consistent nomenclature of feeding difficulties, and information to help design a screening tool for treatment protocols.

The effect of a 6-month lifestyle education program on dietary behaviors in rural adults with prediabetes

I Giroux^{*1}, S Azzi¹, M Lavigne-Robichaud¹, E Comtois¹, S Blaine², B Whebb², T Barresi², A Vermeer². ¹Faculty of Health Sciences, University of Ottawa, Ottawa, ON; ²STAR Family Health Team, Stratford, ON [R]

Objectives: To determine the impact of a 6-month lifestyle education program on eating behaviors in rural adults from Stratford and Tavistock (Ontario) diagnosed with prediabetes.

Methods: Rural adults identified to have impaired fasting glucose and/or impaired glucose tolerance were referred to the education program by their physician. The program provided participants with information on healthy eating and promoted the development of skills regarding healthy eating strategies known to help prevent or delay the development of type 2 diabetes mellitus (T2DM). The pre-program assessment included a demographic questionnaire, as well as weight and height measurements to calculate the body mass index (BMI) of participants. Participants completed a 3-day food intake record before the start of the education program and at the conclusion of the 6-month program. Food intake records were reviewed with clients by a dietitian and analyzed using the ESHA Food Processor SQL version 10.14.0. A paired-sample *t*-test was conducted using SPSS to examine differences in nutrient intake before and after the education program.

Results: Twenty-six rural adults aged 60.3 ± 7.2 (mean \pm SD) participated in the education program. Their average BMI was 33.4 ± 5.9 kg/m². Significant reductions in the average daily intake of some nutrients were observed from before the program to post-program. On average, daily intake of carbohydrates was decreased by 44 ± 80 g ($P < 0.01$), total sugars decreased by 19 ± 32 g ($P < 0.001$), and fat decreased by 14 ± 35 g ($P < 0.05$).

Implications and Conclusions: Based on these preliminary results, it appears that this 6-month lifestyle education program helped those rural adults improve some of their dietary behaviors, such as reducing their total sugars intake, which may in turn help them prevent or delay their risk of developing T2DM in the long run. Funding received from the Public Health Agency of Canada: Canadian Diabetes Strategy.

Effect of high-dose vitamin D supplementation on youth with osteogenesis imperfecta: a randomized controlled trial

Laura Plante^{*1}, Louis-Nicolas Veilleux², Hope Weiler¹, Frank Rauch². ¹School of Dietetics and Human Nutrition, McGill University, Montreal, QC; ²Shriners Hospital for Children, Montreal, QC [R]

Background: Osteogenesis imperfecta (OI) is a genetic disease characterized by fragile bones and short stature. A recent study showed serum 25-hydroxyvitamin D (25OHD) concentrations to be positively associated with lumbar spine areal bone mineral density (LS-aBMD) in patients with OI.

Objectives: To assess whether high-dose vitamin D supplementation will result in significantly higher LS-aBMD z-scores after one-year; and to evaluate the effect of vitamin D supplementation on lower limb muscle power assessed through jumping mechanography.

Methods: Patients were randomized in equal number to receive either 400 or 2000 international units (IU) of vitamin D supplements and stratified according to baseline bisphosphonate treatment status and pubertal stage.

Design: A one-year double blind randomized controlled trial conducted at the Shriners Hospital for Children in Montreal. Participants: Sixty children and adolescents with OI (female, $n = 35$; male, $n = 25$; age 5.9 to 18.9 years; mean 11.7 years, SD 3.2) participated.

Results: At baseline, average serum 25OHD concentration was 65.6 nmol/L (SD 20.4) with no difference seen between treatment groups ($P = 0.77$). Inadequate serum 25OHD concentrations (<50 nmol/L) were measured in only 21% of patients at baseline. Supplementation resulted in higher serum 25OHD concentrations in almost all participants (90%) with significantly higher increases seen with 2000 IU (mean [95% C.I.] = 30.5 nmol/L [21.3; 39.6] vs 15.2 nmol/L [6.4; 24.1], $P = 0.02$). No significant changes were detected in aBMD measurements or in lower limb muscle power between treatment groups from baseline to final visit.

Implications and Conclusions: Supplementation with either 400 or 2000 IU of vitamin D translates into significant increases in serum 25OHD concentrations in children with OI. However, increases in baseline serum 25OHD concentrations already within a healthy range (≥ 50 nmol/L) do not translate into increases in aBMD z-scores in children with OI.

The effect of a FODMAPs diet on symptom production and the gut microbiome in patients with IBS

Keith McIntosh, MD, FRCPC, Theresa Schneider, MPH, RD, Hotel Dieu Hospital Kingston Ian Spreadbury PhD, GIDRU Queen's University BSc, Stephen Vanner, MD, FRCPC, Queen's University [R]

Objective: With increasing evidence that the gut microbiome and foods such as fermentable oligo, di, and monosaccharides and polyols (FODMAPs) contribute to symptoms in patients with irritable bowel syndrome (IBS), this study set out to determine if FODMAPs modulates symptoms in patients with IBS.

Methods: This prospective, randomized trial comparing the effect of low-FODMAP and high-FODMAP diets on IBS patients (ROME III diagnostic criteria), randomized subjects to either diet for a total of 3 weeks, regardless of their previous reported fodmap intake. A RD taught the diets in a 30 min session: with a booklet, food diary, foods to choose and avoid lists and menu choices. The low diet contained 2 servings of wheat/day. The previously validated IBS Symptom Severity Questionnaire measured symptoms. The gut microbiome was assessed indirectly by measuring H₂ production as the change in the area under the curve (AUC) of H₂ ppm for a 5 hour, 10 g Lactulose Breathe Test (LBT). The Dietitian developed a Dietary Fodmap Code (DFC) (intake over a 7 day period using Canada's Food Guide and Estimates of Food Frequencies) to verify dietary compliance.

Results: 40 patients were enrolled with 20 randomized to the low FODMAPs and 20 to the high FODMAP diet. For the analysis, 16 and 18 respectively were used. Baseline symptom scores and LBT H₂ AUC were similar between groups. At the end of the study, symptom scores had decreased by 31.1% in the low FODMAP group ($P < 0.0001$), versus no change in the high FODMAP group (+4.48%, $P = 0.58$). Neither diets produced any significant changes in H₂ AUC (-12.12% , $P = 0.39$ and $+4.8\%$, $P = 0.75$ respectively).

Conclusions: The analysis shows a low FODMAP diet taught by an RD leads to a significant reduction in IBS symptom severity after 3 weeks.

COMMUNITY-BASED NUTRITIONAL CARE

Pediatric dietitian counseling availability associated with lower pediatrician-reported hospital admissions

Katherine (Kay) Watson-Jarvis*, MNS FDC¹, Lorna Driedger BSc RD¹, Tanis R Fenton*, PhD, RD FDC^{1,2}. ¹Nutrition Services,

Alberta Health Services; ²Department of Community Health Sciences, Alberta Children's Hospital Research Institute, Faculty of Medicine, University of Calgary [R]

Objectives: In response to a needs assessment of health care providers, a pediatric out-patient dietitian counseling service was initiated. The objective of this survey was to determine if access to this counseling lowered rates of physicians admitting patients to hospital or referring to specialty clinics for dietitian assessment/counseling. The other objectives were to determine satisfaction of health professionals and parental changes in knowledge, attitudes and behaviours.

Methods: Health professionals were surveyed via email: pediatricians, family physicians, public health nurses, dietitian providers. Parents were interviewed by telephone. Results were compared to the survey completed in 1999.

Results: In 2013, pediatricians reported a significantly lower rate of 7% (95% confidence interval, 0.8 to 23%) of admitting children to hospital to access a dietitian, compared to the 1999 rate of 39% (95% confidence interval, 22 to 59%) ($P = 0.005$). Rates for family physicians admitting to hospital for dietitian access and rates for both pediatricians and family physicians referring to specialty clinics to access a dietitian did not change significantly. Health professionals had a high degree of satisfaction with the dietitian counseling service. There was also a high degree of agreement on the positive effects of the service on their practice and on child nutrition-related health problems. Parents reported gaining knowledge (76%), confidence (92%), and making behavior changes in foods offered (67%) and their parent-child feeding relationship (33%).

Implications and Conclusion: Having a pediatric outpatient dietitian accessible to the health team is a valuable addition to health care. Parents reported that dietitian counseling provided knowledge, confidence and strategies for improving their child's diet quality and the feeding relationship. Further investigation into these types of outcomes is needed to ensure health care is provided in the most effective and efficient manner.

The contributing factors to the negative health behaviours in rural Newfoundland and Labrador

B Hynes*, B Anderson, Acadia University, Wolfville, NS [E]

Purpose: The objective of this study was to identify the factors that most contribute to negative health behaviours in rural Newfoundland and Labrador (NL). This is relevant because of evidence indicating that rural residents have lower levels of health promoting behaviours and poorer health status than those living in urban settings.

Process or Content: A literature review of primarily Canadian sources was completed to identify the state of health in rural NL, the contributing factors to the negative health behaviours observed in these areas, and the effects of the increasing income disparity.

Project Summary: The results of the literature review present a conundrum; one view on the health of rural residents is that they are unhealthier overall and exhibit fewer healthy behaviours. Another view identifies no differences between the health of rural and urban residents when controlling for income. The factors identified as contributing to negative health behaviours in rural areas are income, education and literacy, presence of health services, rurality itself/location, and social and cultural norms. Knowledge of these factors identifies what areas are the most important to focus on when implementing change in rural areas.

Recommendations and Conclusion: Knowledge of the results of this research can inform direction for dietitians, health professionals, and policy makers looking to create the conditions necessary for positive and healthy lifestyles within rural areas. The creation of job opportunities in a rural area, for instance, would increase employment rates and income for many residents thereby reducing associated food insecurity rates.

DETERMINANTS OF FOOD CHOICE, DIETARY INTAKE

Young adults' perceptions of calcium and health: a qualitative study

ML Marcinow¹, JA Randall Simpson¹, SJ Whiting², ME Jung³, AC Buchholz^{*1}. ¹Department of Family Relations and Applied Nutrition, University of Guelph, Guelph, ON; ²Division of Nutrition and Dietetics, University of Saskatchewan, Saskatoon, SK; ³Health and Exercise Sciences, University of British Columbia-Okanagan, Kelowna, BC [R]

Objectives: Previous research by our group demonstrated that 35% of young adults from southwestern Ontario were not meeting their Estimated Average Requirement for dietary calcium. This is concerning as insufficient calcium intake during adulthood is implicated in osteoporosis, hypertension, obesity, colorectal cancer, and Type 2 diabetes. Messages to increase calcium intake are most effective if relevant to the target population; however, calcium-related messaging strategies for young adults are under-reported in the literature. Therefore, our objectives were to explore young adults' perceptions of, (i) the health benefits of calcium for their age group; (ii) messaging to promote, and individual strategies to increase, dietary calcium.

Methods: Six focus groups (~6–9 participants/group; 29 F, 12 M; 18–34 y) were conducted in Guelph ON using a semi-structured interview guide grounded in Social Cognitive Theory and our previous findings. Themes in participants' responses were generated using thematic analysis.

Results: Participants felt adequate calcium was important for children and older adults, but expressed uncertainty about the importance for their age group. Rather than being concerned with obtaining sufficient dietary calcium, participants identified a common goal of focusing on healthy food choices and preparing well-balanced meals. School-based nutrition education beginning at an earlier age, increasing awareness

of the importance of calcium for young adults, and advice from trusted health professionals were suggested as effective strategies to convey calcium-related messages to their demographic. Social media, advertising, and health scare tactics were often mentioned as ineffective. At an individual level, better taste and lower cost of dairy foods, greater convenience (e.g., fortified foods), and meal planning emerged as strategies to increase dietary calcium intake.

Implications and Conclusions: Messaging, including nutrition education focused on meal planning, should be targeted directly to young adults to increase awareness of both the importance of calcium to health, and strategies to increase dietary calcium intake.

Effect of pre-meal active video game playing on subjective appetite and short-term food intake in 9–14 year old children

M Baker* BSc RD, B Gladanac BSc BASc, K Miller BSc, M Da Silva, M Constantino BSc, T Sharif BASc, N Bellissimo PhD. School of Nutrition, Ryerson University, Toronto, ON [R]

Objectives: We previously reported decreased food intake (FI) in children following 30 min of sedentary video game playing; however, the effect of active video game playing (aVGP) on subjective appetite and short-term FI has received little study. We examined the effect of pre-meal active video game playing for 30 min on subjective appetite and short-term FI in 9–14 year old children following the consumption of a glucose preload.

Methods: On four test mornings, in random order and one week apart, children (n = 27; BMI percentile = 55.3 ± 6.1; age = 11.3 ± 0.3 years) received equally sweetened preloads containing sucralose or 50 g of glucose in 250 ml of water, followed by aVGP or sitting quietly for 30 min. Two hours before each test condition, children consumed a standardized breakfast of milk, cereal and orange juice. Energy expenditure was measured by indirect calorimetry during aVGP. Measurements for subjective appetite were taken at 0, 15 and 30 min using visual analogue scales. FI from an ad libitum pizza meal was measured 30 min after each test condition.

Results: Preload treatment ($P < 0.0001$), but not aVGP ($P = 0.28$), affected FI. Caloric compensation was 104% ± 22 and 52% ± 26 in the sitting quietly and aVGP conditions, respectively ($P = 0.12$). The energy cost of aVGP during the sucralose and glucose conditions was 34.0 ± 3.0 kcal and 35.3 ± 2.9 kcal, respectively. Energy balance (FI kcal + preload kcal – aVGP energy expenditure) during the study period was not affected by preload treatment ($P = 0.17$) or aVGP ($P = 0.98$). Change from baseline average subjective appetite was increased by time ($P < 0.01$) but not by aVGP ($P = 0.10$).

Implications and Conclusions: Despite an increase in energy expenditure, neither short-term FI nor energy balance were affected by aVGP. Therefore, low-intensity, short-duration aVGP may not support achieving or maintaining healthy weights in children.

Policy impact on sodium and fibre consumption of preschool children enrolled in regulated child care in Nova Scotia

Misty Rossiter^{*1}, Erin Kelly², Linda Mann², Sara Kirk³. ¹University of Prince Edward Island, Charlottetown PE; ²Mount Saint Vincent University, Halifax, NS; ³Dalhousie University, Halifax NS [R]

Objective: Eating profiles of children in Canada are undesirable. Preschool settings are strategic environments to establish lifelong healthy eating behaviours. The *Food and Nutrition Standards* is a policy-level intervention aimed at improving the food environment and nutrition intakes of children in regulated child care in NS. The objective is to identify obstacles to policy impact through the focused exploration of sodium and fibre intakes of 3–5 years olds enrolled in regulated child care in NS.

Methods: Four-day food records were completed for 71 children enrolled in regulated child care in NS. In addition, the child care centre directors responded to a qualitative questionnaire designed to capture feedback about the challenges they encountered in the implementation of the *Standards*.

Results: The mean daily sodium intake was 1807 mg/d of which 46% was consumed in the child care setting. The mean daily total fibre intake was 15 g/day of which 53% was consumed in the child care setting. Thematic analysis of the questionnaires revealed a strong frustration with the limited availability of foods meeting the sodium restriction criteria outlined within the standards.

Implications and Conclusions: Despite policy aimed at improving the food environment and nutrition intakes in regulated child care settings, sodium and total fibre intake levels represent >150% and <78% (respectively) of DRI recommendations for children. Qualitative data reflects influencing forces such as the current food system and social norms that represent barriers to change. Directed attention towards developing support systems that target these and other broad influencers are recommended to ensure the intended policy impact is realized.

The impact of perceptions and influencers on the eating behaviours of university students

Linda Mann^{*}, RD, MBA¹, Karen Blotnicky, PhD². ¹Associate Professor, Department of Applied Human Nutrition, Mount Saint Vincent University; ²Associate Professor, Department of Business and Tourism, Mount Saint Vincent University
Acknowledgements: Phillip Joy, RD (candidate), MSc; Madeleine Waddington, RD, MScAHN (candidate) [R]

Objective: University students, often making health decisions for the first time in their lives and stressed by studies and finances, have been reported to have poor eating behaviours. To explore this issue, the objective was to determine the impact of a range of perceptions (health/lifestyle, healthy eating and budget constraints) and influencers (professional advice, social/media information, and nutrition self-efficacy)

on eating behaviours of a random sample of NS university students.

Methods: An ethics approved questionnaire was distributed electronically to students at two NS universities. Logistic regression was conducted to determine the relative impact of perceptions and influencers on eating behaviours. The perception and influencer scales were drawn from responses to selected questions and, as applicable, confirmatory factor analyses. Eating behaviours were drawn from three-day food frequencies based on food groups.

Results: Respondents (n = 188) were 78.6% female, average age of 22 and 32.1% had BMIs ≥ 25 . Mean daily vegetable/fruit servings were 3.7, grains 2.3, milk/alternates 2.1 and meat/alternates 1.5 servings/d; and over 27.0% reported no orange/red vegetables and no whole grains. Analyses of the perception scales indicated a neutral rating for health/lifestyle (M = 10.1, SD = 2.0), high healthy eating (M = 20.1, SD = 3.3) and neutral about budget constraints (M = 3.3, SD = 1.3). Information influencers included health professionals, books, trainers, family, friends and media. Mean nutrition self-efficacy scale (4–20) was neutral at 14.2, SD = 2.65. The regression models for minimum vegetable/fruit and meat/alternates groups were each statistically significant for three perceptions and influencers.

Implications and Conclusions: Lack of adherence, despite accurate perceptions, to food guide recommendations along with relative lack of engagement in a healthy lifestyle and high BMIs indicate a need to improve eating behaviours. A focus on key perceptions and influencers can provide insights for health and nutrition promotion by universities and health agencies concerned about the wellbeing of university students.

Restaurant menu labelling practices and supports in Ottawa

M Graham^{*1}, A Ali¹. ¹Ottawa Public Health, Ottawa, ON [R]

Objectives: In Ontario, large chain restaurants will be legislated to implement menu labelling (ML). The current legislation requires posting calories on menus and menu boards in large chain restaurants. Many organizations advocate for including the amount of sodium in addition to calories. Ottawa Public Health conducted surveys to understand public's practices around seeking nutrition information (NI) and to determine stakeholders' support for calorie and sodium disclosure.

Methods: Two public surveys were conducted with: (a) 800 randomly selected residents as part of the 2014 Rapid Risk Factor Surveillance System and (b) 400 residents using a telephone survey. In addition, a stakeholder survey was completed with 200 restaurant operators either online (20%) or by telephone (80%) among 1882 foodservices.

Results: Almost half (48%) of respondents are aware of ML. Most operators (85%) feel their customers can differentiate between healthfulness of menu items compared to 56% residents who believe this is true. Both operators (74%) and customers (80%) feel that foodservices have a responsibility to provide NI. Support for calorie and sodium ML is highest

for hospital cafeterias (87%), grocery store/supermarket buffets (86%), chain restaurants (85%), and college/university cafeterias (84%), and lowest for independent restaurants (71%). Fifty-three (53%) look for NI of which 32% look for it all of the time and 21% some of the time. Among those who look for NI, 32% find it all or most of the time, while 38% find it some of the time. When asked whether they would use the calories and sodium, 49% and 55% said they would use the calories and sodium, respectively all or most of the time.

Implications and conclusions: These findings show that Ottawa consumers seek NI when eating out or ordering take-out food, yet face challenges with finding the information. Consumers support sodium information alongside the number of calories to make informed food choices.

Identifying dietary fibre and protein intakes and their food sources in a pre-dialysis adult population

S Janes^{*1,2}, RJ de Souza^{2,3,4}, J Paterson⁵, A Degen-McLarty⁶, and PB Darling^{1,2,7}. ¹Department of Nutritional Sciences, University of Toronto, Toronto ON; ²Li Ka Shing Knowledge Institute of St Michael's Hospital, Toronto ON; ³Risk Factor Modification Centre, St. Michael's Hospital, Toronto ON; ⁴Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton ON; ⁵University Health Network, Toronto ON; ⁶London Health Sciences Centre, London ON; ⁷Nutrition Sciences Program, University of Ottawa, Ottawa ON [R]

Background: Higher fibre intakes may delay chronic kidney disease (CKD) progression and decrease cardiovascular disease (CVD) risk. However, the fibre intakes and dietary meal patterns of pre-dialysis CKD patients, known to suffer a high CVD burden, are not well-described.

Objectives: (1) To describe intakes of fibre, protein, and their food sources, in pre-dialysis patients and compare intakes to a healthy population. (2) To characterize the daily meal distribution of fibre, protein and energy intakes in pre-dialysis patients.

Methods: A cross-sectional, observational study using the multiple-pass method repeat 24 hour recalls in patients with stages 3–5 CKD who attended pre-dialysis clinics at St. Michael's Hospital and the University Health Network and data extracted from the Canadian Community Health Survey (CCHS) (n = 18 820).

Results: The median (25th, 75th %ile) fibre intake of CKD patients (n = 76) was 9.9 (7.7, 15.0) g/1000 kcal, which fell below the AI of 14 g/1000 kcal for the population. Twenty-four and 84% of participants consumed below the recommended protein (0.8–1.0 g/kg/d) and energy intakes (30–35 kcal/kg/d), respectively. No associations were observed between total fibre, protein and energy intakes. Compared with CCHS, fibre and protein intakes of CKD patients were similar, although energy intakes were significantly lower in CKD patients. Low fibre foods (e.g. potatoes, white bread, lettuce) represent 5 of the top 10 food sources of fibre. The meal distribution of fibre, protein and energy intakes reflect a

'North American-style' eating pattern, with intakes lowest at breakfast and highest at dinner.

Implications and Conclusions: Apparently low dietary fibre intakes of Canadian pre-dialysis CKD patients point to the need for further studies to establish a dietary fibre recommendation for the CKD population. Owing to our small size and the non-comparability of our population with the reference population used to derive the AI, we cannot make any conclusions regarding "adequacy" of intakes of the CKD population.

DIETARY ASSESSMENT

Apports alimentaires et facteurs de risque associés aux maladies cardiovasculaires des étudiantes de la Faculté des Sciences de la santé et services communautaires (FSSSC) de l'Université de Moncton (UdeM).

L Villalón^{*1}, J Zaragoza-Cortés², TJ Saucedo-Molina², A Peña-Irecta². ¹Université de Moncton, NB; ²Universidad Autónoma del Estado de Hidalgo, México [R]

Objectifs : Déterminer les apports alimentaires en macronutriments et les facteurs de risque [indice de masse corporelle (IMC) et tour de taille (TT)] associés aux maladies cardiovasculaires (MC) des étudiantes de la FSSSC de l'UdeM.

Méthodes : Le poids, la taille et le TT ont été mesurés chez cinquante-six étudiantes selon les normes standards. L'IMC a été calculé et comparé aux normes établies. Le rappel de 24 heures a permis de recueillir la consommation alimentaire. La valeur nutritionnelle de l'alimentation a été calculée avec le logiciel Food Processor, comparée aux apports nutritionnels de référence (ANR) et classés en trois catégories >120 %, 80 %–120 % et <80 % des ANR. L'analyse des données a été faite avec le logiciel SPSS-PC.

Résultats : L'âge moyen de participantes est de 20,85 ± 1,97 ans; 75 % des étudiants avait un IMC santé, 20 % étaient en surpoids ou obèses et 5 % maigre. Selon le TT, 3,4 % avaient un faible risque de MC et 12 % avaient un risque élevé. L'analyse des apports nutritionnels a démontré que peu de sujets avaient des apports nutritionnels adéquats correspondant à 80 %–120 % des ANR soit 16,6 % pour l'énergie, 22 % pour les protéines, 28,8 en glucides et 37,3 % pour les lipides. Soixante-un pourcent des participantes ont une consommation énergétique inférieure à 80 % des ANR et 3,4 % supérieure à 120 %; 68 % ont un apport en protéines >120 % des ANR et 10,2 % inférieur à 80 % contrairement aux glucides et lipides où 64,4 % et 50,8 %, respectivement, ont un apport >80 % des ANR.

Conclusions : Leur alimentation est faible en énergie, très élevée en protéines et faible en glucides et lipides. Il serait recommandé de promouvoir chez les étudiants de la FSSSC une alimentation équilibrée en macronutriments.

Nutrition screening practices across care settings in Canada

Cindy Steel RD^{*1}, Heather Wile MA, RD². ¹Nestlé Health Science, North York, ON; ²Nestlé Health Science, North York, ON [R]

Malnutrition has been identified as a prominent, insidious issue across healthcare settings in Canada and around the world. Identification of malnourished and at-risk individuals is a necessary first step in the fight against malnutrition. In Canada, nutrition screening practices to identify malnutrition are largely unknown.

Objective: To understand current nutrition screening practices and help inform potential future practice change initiatives.

Methods: A seven question survey of nutrition screening practices was developed through an expert panel and piloted with practicing dietitians across Canada. A convenience sample of 1424 dietitians was contacted through an email invitation to participate in the survey. Only dietitians practicing direct client nutrition care were invited to participate. To prevent duplicate data, surveys were coded to ensure one response per facility.

Results: Across the country, 256 surveys (18% response rate) were completed. Ninety-five (37%) responses were from hospital, 72 (28%) long term care (LTC), 51 (20%) community, 15 (6%) rehab, and 23 (9%) others. Nutrition screening was reported to occur in 68% of care settings. Prevalence of screening varied by healthcare setting; [LTC (81%), hospital (65%), community (57%), rehab (60%)]. The top two identified barriers to screening in both hospital and LTC were “not enough personnel” and “not enough time”. Of those identified as performing nutrition screening, 40% of hospitals and 66% of LTC facilities indicated they were using tools created within their organization. The Mini Nutritional Assessment (MNA) was identified as the most used validated screening tool (24%).

Implications and Summary: Nutrition screening is occurring in two-thirds of care settings surveyed. Over half of these are using internally created, possibly non-validated, screening tools. Current nutrition screening practices place malnourished and at-risk individuals in jeopardy of being overlooked. Initiatives to increase awareness and shift practice towards nutrition screening and the use of validated screening tools are greatly needed.

DIETETIC PRACTICE AND EDUCATION

Parental perceptions and adherence to micronutrient supplementation in children and adolescents with Celiac Disease

Alzaben AS¹, Hoffmann MR¹, Alsaif M¹, Nikolopoulos H¹, Turner JT^{2,3}, Mager DR^{1,3*}. ¹Department of Agricultural, Food and Nutritional Science; ²Department of Pediatrics, University of Alberta; ³Division of Pediatric Gastroenterology, Stollery Children's Hospital. Edmonton, Alberta [R]

Objectives: Micronutrient intake on the gluten-free diet (GFD) is low in children and adolescents with celiac disease (CD), despite routine prescription. It is currently unknown if parental perceptions regarding micronutrient supplementation influence adherence to supplementation. The study

purpose was to describe parent perceived barriers and facilitators related to adherence to micronutrient supplementation in children and adolescents with CD.

Methods: A mixed-methods model (internet survey, focus groups) was employed. A cross-country survey was launched via local, provincial, and national Celiac Association Chapters. Survey content was vetted by experts and consisted of 35 open-and-closed questions regarding socio-demographic variables, use and prescription of micronutrient supplements (parent/child), and perceptions regarding the barriers/facilitators influencing adherence to supplementation. Focus group content (n = 7; 2 groups) was informed by expert's review and survey response.

Results: Majority of survey respondents (n = 128) were mothers (98%) of children (55% F, 44% M) with CD between the ages of 9–12 (32%). Major facilitators/barriers related to adherence to micronutrient supplementation (focus group/internet survey) included: (a) parental perceptions/knowledge related to need for supplementation to promote child health and well-being, (b) parental role modeling of healthy lifestyle behaviors/diet, (c) routine/memory, (d) financial burden, (e) age of child (>13 years), and (f) health care practitioner lack of knowledge regarding availability of GF micronutrient supplement choices.

Implications and Conclusions: Parental role modeling of healthy eating behaviors, child age, and practitioner knowledge regarding GF-choices for micronutrient supplementation are important determinants of adherence to micronutrient supplementation for the child/adolescent with CD. Focusing nutrition education on optimizing micronutrient intake on the GFD is important.

Preparing students for experiential learning in a clinical setting

Charna Gord, MEd, RD*. Lecturer, Associate Program Director MPH Nutrition and Dietetics Program Department of Nutritional Sciences and the Dalla Lana School of Public Health University of Toronto [E]

Purpose: As health care delivery changes across Canada, newly graduated Registered Dietitians must be equipped to work with patients and clients in a variety of settings. One such setting is the hospital. A student's initial exposure to this complex work environment can be a profound experience, presenting unfamiliar and disturbing sights, sounds and smells. A structured orientation prior to the first entry into a hospital placement can ease the student's initiation. The purpose of this pilot project is to provide an interactive learning module that will prepare masters level nutrition students for practice in a clinical setting.

Content: Drawing from the arts and humanities, the module uses artwork, narrative and poetry to introduce the clinical context to novice practitioners. Strategies such as the use of humour, reflection and goal-setting add interactivity to the session. Social work education literature provides foundational

evidence of the value of well-supported experiential student learning in clinical locations.

Project Summary: Integral to dietetic education is the expectation that students will achieve entry-level practice proficiency in Nutrition Care; competencies that are best learned in a clinical setting. Preparing students to anticipate the challenges common to clinical practice can help ready them to manage disquieting feelings that may accompany their initial foray into this specialized workplace.

Recommendations and Conclusions: Results of this innovative pilot project will inform subsequent program delivery.

Using online methods to obtain client feedback on educational material

C Mehling^{*1}, C Norman², H Haresign¹, H Bloomberg¹. ¹Dietitians of Canada, Toronto, ON; ²Dalla Lana School of Public Health, University of Toronto [R]

Obtaining client feedback on client tools is an important step in the resource development phase. Traditional in-person methods of soliciting feedback on materials is time consuming, challenging and expensive to undertake. Online methods could potentially address these challenges and provide opportunities for more rapid prototyping. This exploratory, efficacy-focused pilot study sought to consider if online methods could provide a feasible alternative to current practice for feedback generation.

Purpose: Compare the reliability and quality of client feedback obtained via an in-person survey against an online approach.

Process: A client handout feedback survey assessed content, layout and design of a new client tool on dietary fibre intake. Through Facebook, volunteers were recruited to review the tool and complete the survey, while a paper version of the survey was sent to Family Healthy Team Registered Dietitians, who recruited participants and mailed completed surveys to study organizers. A sample of 22 participants for each condition was sought.

Project Summary: Recruitment of the required participants was completed in 14 days through Facebook while the traditional paper-based approach required multiple contacts and follow-ups with partners and 10 weeks to reach the same level. Responses were similar between groups across most items, however the online group was younger, more likely to be female, and more likely to contact the host service organization (ERO), while paper survey respondents were more likely to refer a friend to ERO. The amount of detail and length of qualitative feedback provided by participants on the client tool was the same for both conditions.

Recommendations and Conclusions: Online feedback surveys provide comparable results to in-person methods, but required a fraction of the time, effort and cost to implement. This pilot study suggests that the online method is a viable option to solicit feedback on client handouts.

Crossing the clinical/community divide: partnering to create a systems approach to dietetic education

T. Burke^{*1}, D. Bottoni², A. Fox³, C. Gord³. ¹University Health Network; ²Toronto Public Health; ³University of Toronto, Toronto, ON [E]

Purpose: Dietetic education is changing to meet new demands of an evolving health care system. How can we best prepare nutrition students to meet these changes? A partnership model can enhance collaboration between education and practice allowing for innovation and transformation. This session will summarize the development of a partnership between the University of Toronto, the University Health Network and Toronto Public Health resulting in the September 2015 launch of the Master of Public Health in Nutrition and Dietetics.

Process or Content: Willingness to listen and learn, and the ability to relinquish the comfortable feeling of carrying on doing things how they have “always been done” is a prerequisite for this kind of structural change. From selecting applicants, to developing the curriculum and assessing student progress, priorities and values have to be addressed amongst partnership members to move forward cohesively. Identifying common values and acknowledging conflicting needs, with partners acting as both teacher and learners, sets the stage for creating visions and goals. Rotating duties equitably, holding regular frequent check-ins, and anticipating barriers within each partner organization are small but effective steps that help create equal voices and engage leadership across organizations.

Project Summary: Commitment to a shared vision: a systems approach to dietetic education, has laid the foundation for program revision. Moving forward through some uncertainty with optimism, we continue to work on developing curriculum, engaging students and preceptors and refining our vision. To date, the partnership’s success has been held by the recognition of its interdependency and willingness to share in supporting structural change within the partner organizations.

Recommendations and Conclusions: Building effective and sustainable partnerships, where the needs of the participating organizations are acknowledged and addressed is a critical step in creating new and innovative ways of providing dietetic education.

Patients’ perspectives of the integration of diabetes self-management training in primary care using principles of person centred care

B Grohmann^{*1}, E Gucciardi², S Espin³. ¹Ryerson University MHS Nutrition Communication Program; ²Ryerson University School of Nutrition; ³Daphne Cockwell School of Nursing [R]

Objectives: Improved education and patient self-management can lead to increased glycemic control and reduce the risk of health complications. This qualitative study explores diabetes patients’ perspectives of the care received from diabetes

educators (registered nurse and dietitian certified diabetes educators) who traveled to various doctors' offices providing diabetes self-management training (DSMT) and support in primary care using key principles of person centred care.

Methods: Three diabetes education programs integrated DSMT in 11 primary care sites in a region of Ontario, Canada from November 2009 to August 2014. Semi-structured interviews were conducted with 23 patients. Data was analyzed using thematic analysis with Nvivo software.

Results: Patients described feelings of support following appointments with the diabetes educators by experiencing encouragement and motivation. Relationships developed between patients and educators through the use of goal setting and one-on-one sessions. Patients demonstrated elevated self-efficacy by expressing increased confidence and knowledge with managing their diabetes self-care. The collaborative environment between patients and educators, along with the respect voiced by the patients, fostered a sense of individualistic care. Based on the interviews, the integrated DMST exhibited many of the key principles of person centred care.

Implications and Conclusions: Diabetes patients may benefit from the convenient access to an inter-professional team of educators in primary care to improve diabetes self-management. Having the diabetes educators onsite, in direct communication with primary care physicians, benefits both patients and physicians by providing expert care and increasing integrated, comprehensive care. The integration of DMST in primary care provides a person centred care approach to education, training and clinical care that can help to empower individuals to better manage their own care.

Nutrigenomics: an evident need for education in the field of dietetics

Justine Horne¹, MScFN (c), Dr. Janet Madill¹, PhD, RD, Dr. Colleen O'Connor^{*1}, PhD, RD. ¹*Division of Food and Nutritional Sciences, Brescia University College, London, ON [E]*

Purpose: The purpose of this article was to review trends in nutrigenomics and discuss the impact of these trends on dietetic education and practice.

Content: Personal nutrigenomics testing (PNT) is an individualized, innovative approach to nutrition counseling that offers personalized nutrition recommendations based on genetic profiling. This area of dietetics was predicted to greatly affect dietetic workforce supply and demand from 2012–2022, with nutrigenomics market research forecasting a 20% annual growth rate. Furthermore, scientific research in nutrigenomics continues to advance allowing for a deeper understanding of the impact of genetics on nutrition. Because of this, PNT is now available to consumers through dietitians all over the world.

Project Summary: Despite these positive advancements, knowledge of nutrigenomics is extremely limited in students and health care professionals alike. Concerningly, nutrigenomics has yet to be included as a mandatory area of study for dietetic undergraduate programs in Canada and the United

States (US). Furthermore, knowledge and experience with PNT is not a required competency within dietetic internship programs in Canada or the US.

Recommendations: To move forward with the incorporation of mandatory nutrigenomics education in the field of dietetics, we recommend advocacy from dietetic professionals, supported by a previously published model for effective nutrigenomics undergraduate education.

Conclusions: Ultimately, improving the health of our population should be guided by proactive measures, such as PNT, to prevent negative health outcomes. Education around PNT, as a method of innovative personalized nutrition counseling, will certainly aid in the progression of preventative health strategies.

EDUCATION, TRAINING, AND COUNSELLING

Integrating the Organizational Framework for Exploring Nutrition Narratives (OFFENN) and the Nutrition Community Mentors Project (NCMP) to prepare students for their roles in client-centred nutrition counselling

C Morley, Acadia University, Wolfville, NS [R]

Objectives: The NCMP was to provide students with opportunities to practice interviewing volunteers to learn how to invite nutrition narratives, and how to deconstruct/interpret these to learn about clients' nutrition education needs (what they wanted to learn) and preferences (how they wanted to learn). Volunteers had experienced a change in health status or life circumstances (e.g., had a baby, taking care of an aging/sick family member) that affected what/how they ate. Students were to learn from mentors, they were not to provide nutrition counselling.

Methods: Students participated in an in-class workshop on deconstructing sample nutrition narratives using the OFFENN domains and filters. Groups of four students met twice with their mentors. The first meeting was to practice interviewing to gather/witness nutrition narratives, and for students to study their own interviewing skills including verbal/nonverbal aspects. Between meetings, groups deconstructed the narratives; this generated additional questions. The second meeting was to share the group's learnings, and to learn more about their mentor's eating/feeding experiences. Simultaneously, students journalled weekly on *Enhancing Adult Motivation to Learn* (Wlodkowski, 2008). Student groups planned knowledge mobilization approaches to share with classmates what they had learned about client-centred approaches.

Results: Online survey results with students showed that students developed comfort interviewing people they have not previously met about intimate aspects of eating/feeding and their relationships with/through food, and in deconstructing/interpreting nutrition narratives. Results from the survey of volunteers revealed their ongoing commitment to supporting students and their willingness to volunteer again.

Implications and Conclusions: Use of the NCMP was effective in increasing students' comfort in conducting interviews

with clients. Use of the OFFENN provided structure to organize what they had heard and to identify clients' priorities. Students recognized the need for flexible counselling approaches that address clients', not their own, needs. Thanks to Acadia University Research Fund.

Dietitian students empowered for change

C McIntosh. Masters of Nutrition and Dietetics Practice Program, Bond University, Robina, Qld, Australia [E]

Purpose: Dietitians are positioned in the patient care journey to assist nutrition behaviour change. Nutrition counselling is essential for patients to make life changes but is often framed as an advanced health provider skill and not forefront in entry level dietitian training. Yet worldwide populations face increasingly complicated challenges in food intake decisions and health care systems face crisis in chronic disease incidence. New graduate dietitians need to be equipped for these current issues. This project reviews the inclusion of Motivational Interviewing as an integrated part of clinical practice starting at semester one of a six semester curriculum at Bond University's new Masters of Nutrition and Dietetics Practice Program.

Process or Content: This project reviewed total topical teaching hours, student perceptions of academic experience, instructor perceptions of test and practicum results, two Objective Structured Clinical Examinations, and student and mentor experiences during Internships. The report includes considerations of key barriers to change of training practices. The literature revealed a health practice culture that prefers traditional patient educational approaches to psychological approaches and promotion of teaching clinical knowledge over counselling skills. An ongoing research consideration is whether students have the life or professional experience to aptly apply the skills with a challenging client.

Project Summary: Surveys and assessments show the following: student insight of skill level in their self and peer assessments of patient conversations; mentor surveys acknowledged the advanced skills of these students when compared to other students without training; challenges of students ability while on placement to equally regulate their learning and application of both new clinical skills and counselling skills.

Recommendations and Conclusions: One new strategy is an increased use of simulation and standardized patients. These outcomes to date reconfirm the Program's commitment to nutrition counselling as a core educational objective for entry level dietitians around the world.

Trust Me, Trust My Tummy: A video resource to support responsive feeding and a timely introduction of solids

Susan Knowles BASc, RD¹, Angela Foresythe BSc RD¹, Eva Loewenberger MPH RD, Cathy Vance BScN, RN², Rebecca Davids MSc RD³, Laura Atkinson BSc RD. ¹Toronto Public Health; ²Region of Peel Public Health; ³The Regional Municipality of York [E]*

Purpose: Public health professionals frequently encounter families who introduce solids too early to their babies. Anecdotal data reveals that families receive conflicting information about the timing of introduction of complementary foods and often lack understanding of responsive feeding. An environmental scan identified a need for easy-to-understand, visual resources that address this issue. As a result, Toronto, Peel and York Region Public Health Units collaboratively developed the "Trust Me, Trust My Tummy" video. This video provides evidence-based information on developmental readiness for solids, cue-based feeding and parental engagement during mealtimes that support the development of healthy eating skills.

Process or Content: A story-board was developed using the most current evidence. The video shoot included culturally diverse participants and captured key messages on responsive feeding, promoting appropriate infant-feeding skills, eating as a family and role modeling healthy eating behaviours. Throughout the project, input and consultation was provided from staff at each health unit including Public Health Nurses, Family Home Visitors, Community Nutrition Educators and members of the Baby-Friendly Initiative committee. The video was focus-tested with parents who provided valuable feedback. It was converted into DVD format with an accompanying insert summarizing the key messages.

Project Summary: The "Trust Me, Trust My Tummy" video/DVD provides families and health professionals with a much needed teaching/learning tool that supports exclusive breastfeeding for the first 6 months, the timely introduction of complementary foods and responsive feeding of babies and toddlers that support the development of healthy eating skills.

Recommendations and Conclusion: The video/DVD is a valuable educational tool for health professionals to use with clients and in programming (e.g., Healthy Babies Healthy Children, Teen Prenatal Supper Club, Peer Nutrition Program). The video will be posted on Toronto, Peel and York Region Public Health Units' websites and other agencies/organizations will be able to link to it.

FOOD CONTENT, SELECTION, AND SAFETY

Increasing local, sustainable, healthy food procurement with the Vancouver Board of Education

*A Cowie¹, K Romses^{*2}, I Wind³, J Cook³, M Schutzbank⁴ J Bays⁵. ¹Farm Folk City Folk, Vancouver, BC; ²Vancouver Coastal Health, Vancouver, BC; ³Vancouver Board of Education, Vancouver, BC; ⁴Fresh Roots Urban Farm, Vancouver, BC; ⁵Farm to Cafeteria Canada, Vancouver, BC [E]*

Purpose: Members of Farm to School Greater Vancouver (F2SGV) are using an Institutional Food Procurement Learning Lab (LL) model to work towards changing buying practices in ways that increase local, sustainable, healthy food procurement within the Vancouver Board of Education (VBE).

Process or Content: Four key goals were identified by VBE purchasing and service staff in their LL. The goals are being achieved by working through large-scale contracted suppliers, such as Sysco, while also engaging and supporting schools to buy directly from local urban farms. Fresh Roots has school-yard market gardens at two Vancouver secondary schools. Activities to date have included a test kitchen with VBE staff to introduce seasonally aligned menus into secondary schools; provincial Guidelines workshops for VBE staff, in partnership with Vancouver Coastal Health and FR; a F2SGV newsletter; and a baseline analysis of current purchasing practices. Planned activities include a learning and networking event to showcase F2SGV initiatives, a Farm to School directory, a F2SGV video, a Food That Fits workshop designed to help parents and students offer local, sustainable, healthy food for sale to students and a set of recommendations on procurement changes at the supplier level.

Project Summary: The project continues to work on the established goals and measure the results using purchasing reports. Plans include the development of a toolkit for other LLs around the country, which will build capacity for local, regional and national organizations to pursue similar ventures in their own jurisdictions.

Recommendations and Conclusions: The VBE LL is the first in Canada and LLs are sprouting across the country. LL members are working with national groups including Farm to Cafeteria Canada and the Food Secure Canada Institutional Food Fund Learning Group. As a result, ground breaking methods of scaling up procurement of local, sustainable, healthy food are growing across Canada.

NUTRITION AND HEALTH EDUCATION

Discrepancies between health professionals' understanding and the evidence for sugars-related nutrition issues in Canada

Chiara L. DiAngelo*, Flora Wang, Heather Carson, Laura Pasut and Sandra L. Marsden. *Nutrition Information Service, Canadian Sugar Institute, Toronto, ON M5J 2R8, Canada [R]* Recently, sugar has become a highly debated topic in the media. Single observational studies reporting associations of sugars with obesity or other chronic diseases have been popularized to imply causation where robust scientific evidence including systematic reviews do not support these findings. Meta-analyses consistently demonstrate that sugars are no more likely to contribute to weight gain than other energy sources when compared iso-calorically. Our previous surveys identified misconceptions among health professionals on sugars-related topics. Since health professionals are relied upon to communicate accurate scientific information to both the general public and the media, the objective of this study was to continue to assess health professionals' perceptions of current sugars-related topics. A total of 355 health professionals, primarily dietitians, voluntarily completed questionnaires at two national conferences in 2014. Two-thirds (64%)

of respondents thought added sugars contribute 21%–23% of total energy intake – double the actual amount, which is 11% of daily calories estimated based on total sugars data from the 2004 Canadian Community Health Survey. Very few (9%) respondents knew that added sugars consumption in Canada is approximately one-third (30%) less than US consumption. Over three quarters (79%) of respondents believed that added sugars consumption has contributed to rising obesity rates in Canada, while 10% disagreed with this statement. Only 10% of respondents correctly identified that the WHO 10% guideline for “free sugars” intake was based on evidence related to dental caries. Almost three-quarters (72%) of respondents thought the guideline was based on evidence related to all listed options: obesity, metabolic syndrome, diabetes, and dental caries. In conclusion, a number of knowledge gaps on sugars-related topics were identified among surveyed health professionals. Further investigation in a larger population is warranted. Future research will also focus on best practices to help support the communication of evidence-based information related to sugars.

Analyse et modification d'un programme d'activités éducatives en nutrition pour la petite enfance au Québec

A Motard-Bélanger^{*1}, A-A Vincent¹, M Caron-Jobin¹, J Deschamps¹, J Paquette¹. ¹Les Producteurs laitiers du Canada, Montréal, QC [E]

But : Les aventures de Pat le mille-pattes est un programme d'activités éducatives en nutrition mis au point par l'équipe des diététistes des Producteurs laitiers du Canada (PLC). Ce programme s'adresse au personnel éducateur des services de garde éducatifs à l'enfance ainsi qu'aux enfants de 3 à 5 ans. Une analyse du programme, menée en 2013–2014, a permis de dégager des recommandations afin d'en bonifier le contenu.

Processus ou contenu : Des groupes de discussion regroupant des responsables d'un service de garde en milieu familial et des agents de soutien pédagogique du milieu de la petite enfance ont été menés. L'objectif était de connaître la réalité de leur travail et leur opinion sur les outils pédagogiques offerts par l'équipe des diététistes des PLC. Des évaluations d'activités ont également été réalisées dans des services de garde afin d'évaluer la faisabilité des activités et de recueillir les commentaires des éducatrices à l'égard du programme. Par la suite, un comité consultatif réunissant des gens du milieu de la petite enfance s'est penché sur les résultats de cette analyse pour émettre des recommandations.

Sommaire : La majorité des éducatrices jugeaient que les activités étaient adaptées à la réalité des milieux. Quatre activités sur 10 nécessitaient d'être modifiées plus en profondeur pour les adapter davantage aux besoins des enfants. Également, les histoires servant à mettre en contexte les activités devaient être plus illustrées pour intéresser davantage les enfants.

Recommandations and conclusions : Ce processus d'analyse a permis la révision du programme Les aventures de Pat le

mille-pattes. La nouvelle version comprend des histoires plus illustrées, des activités revues et améliorées, de nouvelles activités culinaires adaptées à la réalité du milieu, de nouvelles comptines et du matériel complémentaire tel que des marottes et une vidéo afin de rendre l'outil plus adapté aux besoins du milieu.

Readability and quality assessment of web based consumer information on metabolic syndrome and diet

Alexa Ferdinands, BSc, RD¹, Haley Pomreinke, BSc Candidate^{*2}, Lorian Taylor, MASc, MPH, PhD¹. ¹Alberta Health Services; ²University of Alberta [R]

Objectives: The primary objective was to evaluate the readability and quality of web based consumer information on metabolic syndrome and diet. The secondary objective was to compare ratings from a short consumer based tool to more established measures of information quality.

Methods: Three search terms ("MetS diet", "MetS food" and "MetS nutrition") were entered into three search engines and 579 web resources were identified. Out of these, 521 resources were excluded as duplicates or not meeting inclusion criteria. Quality of the 58 remaining web resources was evaluated using the DISCERN instrument, Suitability Assessment of Materials (SAM) and a consumer web site evaluation tool (SCREEN) by three independent raters. Readability was evaluated using SMOG, Flesch Kincaid grade level and reading ease. Descriptive statistics and correlations between tools were calculated.

Results: The 58 websites reviewed had a mean grade 11 reading level and 49% (SD = 11.9%) reading ease. The SCREEN identified 5 websites, the DISCERN identified 6 websites and the SAM identified 4 websites as high quality. The SCREEN tool was significantly correlated with DISCERN ($r = 0.77$, $P < 0.001$) but not the SAM ($r = 0.24$, $P > 0.05$).

Implications and Conclusions: The readability and quality of diet information for metabolic syndrome available on the web is generally a high literacy level and low quality. Promoting the SCREEN tool to consumers may help them judge the quality of web based health information. Also, designers of web based education resources would likely benefit from using multiple tools like DISCERN and SAM to guide the development process.

Évaluation d'un outil d'éducation à la nutrition pour la petite enfance

J Deschamps^{*1}, M-C Beaudet¹, N Roy¹, J Paquette¹. ¹Les Producteurs laitiers du Canada, Montréal, QC [E]

But : L'équipe des diététistes des Producteurs laitiers du Canada conçoit annuellement une affiche éducative destinée aux services de garde éducatifs à l'enfance. Cette affiche interactive est accompagnée d'un feuillet comprenant des activités d'éveil à l'alimentation pour les enfants d'âge préscolaire. L'objectif principal de cette évaluation était de connaître les conditions d'implantation, le niveau d'utilisation, l'appréciation et la pertinence de l'affiche.

Processus ou contenu : Un sondage Web a été envoyé par courriel aux services de garde en installation du Québec et des Maritimes. Les intervenants des milieux étaient invités à remplir ce sondage, qui a ensuite été compilé et analysé.

Sommaire : Au total, 524 personnes ont répondu au sondage (74 % du Québec et 26 % des Maritimes). Parmi les répondants ayant reçu les affiches au cours des dernières années ($n = 111$), la majorité avait utilisé l'outil dans la dernière année (81 %). Les activités qui accompagnaient l'affiche étaient « beaucoup appréciées » par la majorité des utilisateurs (57 % à 77 %, selon l'activité), qui considéraient pour la plupart que les activités étaient faciles à intégrer dans leur quotidien. Les activités de découverte des aliments sont celles qui ont été le plus réalisées par les milieux.

Recommandations et conclusions : Cette évaluation a permis de constater que pour rendre les affiches encore plus disponibles dans les milieux, le processus de distribution était à revoir. Les résultats du sondage révèlent également que la majorité des personnes qui reçoivent l'affiche l'utilisent et l'apprécient, ce qui confirme la pertinence de cet outil auprès des éducateurs en petite enfance. Les prochaines éditions seront mises au point de manière à inclure le même type d'activités. Bien que ce ne fût pas l'objectif principal, cette évaluation a permis de mieux connaître les intérêts, besoins et pratiques des intervenants en matière d'éducation à la nutrition.

Key features of effective structured behavioural programs in primary care: what are they?

Paula Brauer^{*1}, Dawna Royall¹, Olivia O'Young¹, John J.M. Dwyer¹, A. Michele Edwards¹, Tracy Hussey², Nicholas Kates². ¹Department of Family Relations and Applied Nutrition, University of Guelph, Guelph, ON; ²Hamilton Family Health Team, Hamilton, ON [E]

Purpose: Recent systematic reviews of the key features of effective behavioral lifestyle/diet/exercise programs have failed to reach a consensus on what works, leaving practitioners uncertain as to how to best organize programs. From a scoping review we conducted as well as from a recent systematic review on weight loss treatment conducted for the Canadian Task Force on Preventive Health Care (CTFPHC), we sought to identify possible required vs. discretionary features of effective programs that had weight loss as one outcome.

Process: Of 280 unique studies identified in the scoping review of weight loss interventions conducted in overweight/obese adults in primary care, 21 were considered promising studies, as they achieved at least a mean 3% weight loss (or 1 BMI unit) or reported a decrease in disease incidence. Of the 68 randomized clinical trials in the CTFPHC adult obesity treatment review, 29 (lifestyle and/or medication) studies met a point estimate threshold of four kg of weight loss or had a statistically significant effect for loss of $\geq 5\%$ or $\geq 10\%$ of baseline body weight. Features of the 15 behavioural interventions were reviewed in this analysis.

Project Summary: Narrative review results using different approaches to describe these complex interventions will be presented. No “required” features could be identified.

Recommendations and Conclusions: Successful behavioral lifestyle/diet/exercise programs conducted in primary care generally achieve modest changes in body weight. This new interpretation of the state of the evidence provides new guidance on common desirable elements for planners to consider in program development.

NUTRITIONAL ASSESSMENT AND THERAPY

Nutritional status of patients with interstitial lung disease: a cross-sectional pilot study

Sylvia Rinaldi^{*1}, Marco Mura, MD, PhD², Janet Madill, RD, PhD^{*1}. ¹Food and Nutritional Sciences, Brescia University College at the University of Western Ontario, London ON, Canada; ²Respirology, London Health Sciences Centre, Victoria Hospital, London, ON, Canada [R]

Objectives: Interstitial lung disease (ILD) comprises a group of chronic disorders that involve the entire lung parenchyma and interstitium. Phase angle which is an indicator of cell integrity, has been studied as a prognostic indicator of morbidity and mortality. Evidence is lacking within the ILD patient population related to phase angle and nutritional status. This research aims to investigate the nutritional status of ILD patients.

Methods: Data collected on 50 ILD clinic outpatients included age, gender, weight, height, Subjective Global Assessment (SGA) score, and fat mass index (FMI), fat-free mass index (FFMI) and phase angle measured using bioelectrical impedance analysis. A low FFMI was defined as ≤ 17.4 kg/m² (males) and ≤ 15.0 kg/m² (females). A high FMI was defined as ≥ 8.3 kg/m² (males) or ≥ 11.8 kg/m² (females). Data were analyzed using frequency distributions, means \pm standard deviations. *t*-tests were used to test for significance of $P < 0.05$.

Results: Participants were 60% female with mean age 68.1 ± 9.6 years. Mean phase angle $5.25 \pm 2.16^\circ$. A low FFMI and high FMI was identified in 28.9% and 68.9% of participants, respectively. Mean phase angles for SGA categories A, B and C were $5.08 \pm 0.81^\circ$, $4.99 \pm 0.95^\circ$ and $3.93 \pm 1.53^\circ$, respectively. Mean phase angles for high FMI versus normal were $5.03 \pm 0.90^\circ$ and $3.10 \pm 0.71^\circ$ ($P = 0.005$), respectively. Mean phase angles for low FFMI versus normal were $4.24 \pm 0.86^\circ$ and $5.24 \pm 0.86^\circ$ ($P = 0.001$), respectively.

Implications and Conclusions: Data showed a trend toward presence of malnutrition and decreased phase angle indicating decreased cell integrity, although not significant. As compared to normal, phase angle was significantly greater with high FMIs and significantly lower with low FFMI. This research provides novel ILD baseline data and highlights the importance of nutritional status and its link to clinical outcomes.

OTHER

Social media: innovative promotion to help grow Australia's Healthy Weight Week

S Grafenauer^{*1}, E Jones¹, J Markoska¹, S Moloney¹. ¹Dietitians Association of Australia, Canberra, ACT. [E]

Purpose: Australia's Healthy Weight Week (AHWW) is an initiative of the Dietitians Association of Australia (DAA), running for eight years to promote Accredited Practising Dietitians (APDs). APD members leverage the campaign to promote their own services by hosting events for the general public. Traditional advertising together with token social media use has resulted in incremental growth in the campaign over a number of years. However, traditional ads are considered expensive and difficult to measure. The aim was to report on the strategic use of social media and engagement in the promotion of AHWW campaigns up to and including 2015.

Process: Program planning methodology, including two clear communication objectives, were used with a number of tools to evaluate the impact of social media (Google Analytics, media monitoring, Storify, TweetReach and Klout score).

Project Summary: In 2014 more than 290 events ($\uparrow 265\%$) were held with more than 546 APDs ($\uparrow 366\%$) involved. There were 9731 visits and 70 000 page views to the AHWW website, 87.1% from Facebook and 11.5% from Twitter. This traffic also drove an 11% increase to ‘Find an APD’, a key strategic outcome of the campaign. The online media value alone equated to >1million AUD, more than any previous campaign. There were 1700 tweets generated by 519 contributors and at the end of the 2014 campaign, the @HealthyWtWk Twitter account had 1076 followers ($\uparrow 44.8\%$) and achieved a Klout score (level of influence 1–100) of 50. The results of the 2015 campaign (to be conducted 16–22 February) and earlier campaigns will also be presented.

Recommendation and Conclusion: Facebook and Twitter were successfully used to drive engagement and growth in the 2014 AHWW campaign and would be an effective tool for practitioners in private practice through to large scale health promotion campaigns.

Why Canadian consumers access the Nutrition Facts Table

S. Potvin^{*1}, V. Connan², M. Kalergis¹, N. Savoie¹, J. Hovius³. ¹Dairy Farmers of Canada, Montreal, Quebec; ²School of Dietetics and Human Nutrition, McGill University, Canada Montreal, Quebec, Canada; ³Research Management Group, Toronto, ON [R]

Context: The Nutrition Facts Table is an important tool that is used in nutrition education to help consumers make healthy food choices. Therefore, it is important to understand if consumers use the Nutrition Facts Table and the reasons for doing so.

Objective: Determine consumer frequency of reading the Nutrition Facts Table, referring to %DV, and reasons for referring to %DV.

Methods: 1000 Canadian adults (18 years and older) were interviewed, via an online survey, from July 24–27, 2014 using the *Ipsos Canada* online panel, a representative sample of Canadian adults. A final sample of 923 consumers met the inclusion criteria.

Results: A large proportion of consumers consult the Nutrition Facts Table and %DV (86% and 70% respectively), at least some of the time, whereas 51% and 38% refer to them most of the time/always. Of those who use the %DV, 57% do so to determine if a product contains *a little or a lot* of a specific nutrient, 47% to compare products on nutrient content, 35% to help meet and 34% to avoid exceeding daily requirements of specific nutrients.

Implications and Conclusions: Understanding if and how Canadians use the Nutrition Facts Table has important implications for public health and clinical dietetic practice. The majority of consumers refer to the Nutrition Facts Table and those that specifically look at %DVs, do so mainly to determine if a product contains *a little or a lot* of a specific nutrient.

Smartphone based program for improving food literacy and healthy eating

C O'Connor^{*1}, J Gilliland², R Sadler², A Clark², M Milczarek², S Doherty³. ¹Brescia University College, London, ON; ²Western University, London, ON; ³Wilfred Laurier University, Waterloo, ON [E]

Several of the most critical health issues facing Canadians are linked to poor nutrition (e.g., obesity, heart disease, hypertension, and type-2 diabetes). Innovative, research-driven solutions are required to address knowledge deficits and encourage healthier diets. Smartphones are an appealing medium to deliver health-related interventions due to their ubiquity, particularly among adolescent and adult populations. We have developed a multi-level approach to assess the efficacy of a smartphone 'app' on increasing knowledge about healthy foods ('food literacy') and encouraging healthier food purchasing and eating behaviours among adolescents and adults. Our cross-sector collaboration of researchers and community stakeholders was forged out of our common interests in trying to address two intertwined issues, which are among Canada's most 'wicked problems': *reversing the rising rates of childhood obesity* and *revitalizing our local food system*. SmartAPPetite contains an innovative combination of features that set it apart from other food apps and, we argue, increase its effectiveness at both promoting healthy eating and strengthening the local food system. Following a rigorous research protocol, SmartAPPetite sends users personalized *food tips* (about nutrition, seasonal availability, healthy behaviours, food handling), as well as related *recipes* and *vendors* to inform and subsequently 'nudge' users from their personally defined food goals to making healthier food choices and smarter purchases at pre-screened local vendors. We piloted a version of our smartphone-based food messaging intervention on a sample of adults in 2013, with results suggesting that greater engagement with the program led to increased intake of fruits and vegetables and decreases in unhealthy snack

foods. In 2014, we conducted field research to develop the "SmartAPPetite" app. The next phases of our research are to develop the app for Android products, and to study the effectiveness of our app as an intervention to improve food literacy and healthy eating among different sub-groups of Canadians.

Adaptation of current eating disorder treatment for clients with previous bariatric surgery

Holly Axt* H. Axt Trillium Health Partners–Eating Disorders Program. Mississauga, ON [R]

Purpose: Management of nutritional care is important in both eating disorder (ED) treatment and after bariatric surgery. However, challenges can arise when the nutritional rehabilitative components of each condition result in treatment plans that run counter to one another. This is especially true in group treatment settings, where relatively homogeneous approaches are preferable. There is currently limited research available on the management of ED clients with a history of bariatric surgery. A case series is presented to review the adaptations made in an intensive eating disorder treatment program to meet the needs of this client population.

Process: Three female clients consented to have their clinical charts and admission/discharge measurement packages reviewed. All three clients had histories of bariatric surgery and had a DSM-IV ED diagnosis. They were all voluntary participants in The Trillium Health Partners Eating Disorders Day Hospital Program at the Credit Valley site in Ontario, Canada. Each client had a length of stay of eight weeks.

Project Summary: All three clients experienced challenges tolerating the typical program meal plan. Each client was given a modified meal plan prescribed by the dietitians. In comparison of ED symptomatology clients trended toward decrease in ED symptomatology when admission and discharge measures were compared. In addition group acceptance of client's special requirements was favourable.

Recommendations and Conclusions: As a result of the rise in bariatric procedures, ED clinics need to be prepared to assess and treat individuals with EDs following bariatric surgery. Management of individualized needs was accomplished by being transparent about previous surgery, providing ongoing dietitian support, and adjustment of meal plans as appropriate. Moving forward, ED programs should consider establishing relationships with bariatric centres. This will allow for more timely and effective care, as well as for research opportunities on prevention and treatment.

PATIENT SERVICES

Raising awareness of malnutrition – protected meal times to improve patient care

T. Cividin^{*1}, E. Cabrera^{*2}. ^{1,2}Vancouver General Hospital, Vancouver, BC [E]

Purpose: To implement a protected meal time program on the acute medical unit (AMU) at Vancouver General Hospital (VGH).

Process: Data from VGH's participation in the Nutrition Care in Canadian Hospitals Study identified that 34% of subjects admitted to medical units were malnourished and 29% ate less than 50% of meals. One recommendation from the study was to implement protected meal times (PMT) to improve patient intake and address barriers to eating. In phase 1 (May–July 2014), baseline mealtime audits were completed. Audits (n = 136) revealed: 163 meal time interruptions; patient hand hygiene prior to meals was 0%; 74% of patients had good meal time positioning; and 28% had intakes of less than 50% of meals. Staff in-services were held to raise awareness and to present audit results and recommendations. Recommendations included addressing hand hygiene and developing posters to promote PMT to staff, patients and visitors. In phase 2 (September–November 2014), the recommendations were implemented and a second audit was conducted which revealed that meal time interruptions were reduced to 47, hand hygiene improved to 56%, 100% of patients had good positioning, and 16% had intakes of less than 50%. In addition, menu samplings were held to improve staff attitudes towards menu items. To further inform the project, staff and patients were interviewed on their perspectives on PMT.

Project Summary: PMT was successfully implemented on the AMU at VGH. Staff awareness of malnutrition has increased. Patients are receiving mealtime assistance and mealtime interruptions are minimized.

Recommendations and Conclusions: Future plans include incorporating PMT in orientation for staff, patients, and visitors; ongoing reminders for patient hand hygiene; continuing meal time audits; and expanding PMT to other units at VGH.

Improving the hospital experience: Technology at the bedside

Haskey N^{1,2}, Richmond M¹, Kowalchuk J¹, Friesen A^{1,2}, Hauber J^{1,2}, and Peiris C^{1,2}. ¹Saskatoon Health Region, Food and Nutrition Services; ²College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan [R]

Background: Patients' satisfaction with hospital foodservice is associated with a positive overall hospital experience and improved patient recovery through improved nutrition intake. Electronic menu selection can increase the efficiency of the menu selection process by reducing paperwork, errors due to miscommunication and improve patient and employee satisfaction.

Objective: To determine the level of satisfaction of patients admitted to the acute care hospitals in the Saskatoon Health Region (SHR) have with the current menu selection process and to determine patient interest in bedside menu selection.

Methods: A satisfaction survey was administered to patients (n = 87) at the Royal University Hospital (RUH), Saskatoon City Hospital (SCH), and St. Paul's Hospital (SPH) in Saskatoon. Results were tabulated and analyzed using Microsoft Excel and SPSS Version 22.

Results: The mean age of participants was 67 (n = 87). The majority (n = 85) reported filling out their paper menus.

Thirty-three of those participants (39%) stated they required assistance filling out the menu because they were unable to see or write, they did not understand the menu or found it confusing, or they forgot to fill it out. Of those not receiving assistance with their menus, 19 participants (35%) felt the assistance of a hospital employee would have been helpful. Fifty-nine participants (71%) (n = 83) rated the current menu selection process between 7.6–10 (1 is unsatisfied, 10 is satisfied). Forty-nine participants (65%) felt that using a bedside computer system for menu selection would improve their hospital experience.

Implications and Conclusions: The majority of participants (71%) were satisfied with the current menu selection process, however 29% remain unsatisfied. Patients are open to the idea of using technology for menu selection. Implementing an electronic menu system has the potential to improve patients' experience with hospital foodservice and their overall experience in hospital through improved communication and efficiency of the menu selection process.

RESEARCH METHODOLOGIES

Utilisation de l'art pour explorer l'acculturation alimentaire chez des enfants de descendance africaine et caribéenne d'âge scolaire vivant à Ottawa

Rosanne Blanchet^{*1}, Dia Sanou¹, Malek Batal², Isabelle Giroux¹. ¹Faculté des sciences de la santé, Université d'Ottawa, Ottawa, Ontario; ²Faculté de Médecine, Université de Montréal, Montréal, Québec [E]

Contexte : L'impact de l'acculturation sur la santé nutritionnelle des enfants immigrants a été particulièrement sous-étudié au Canada.

Objectif : Dans le cadre d'un projet à méthodologie mixte ayant pour objectif de documenter les déterminants de l'alimentation d'enfants immigrants noirs de 6 à 12 ans vivant à Ottawa, nous leur avons demandé de faire des dessins afin d'explorer leurs perceptions de l'acculturation alimentaire.

Contenu : L'utilisation des dessins est préférable à une discussion seule puisqu'à cet âge les enfants ont l'habileté de transmettre des sentiments et des émotions à l'aide de dessins alors qu'ils ne sont pas encore aussi expressifs à l'écrit ou à l'oral. Cette méthode est simple, claire, reproductible, peu dispendieuse, ne nécessite pas de matériel spécifique, et est facile à utiliser par d'autres chercheurs. De plus, elle ne nécessite pas de talent artistique particulier de la part des enfants.

Résumé du projet : L'un des dessins des enfants devait être en lien avec l'alimentation du pays d'origine de leur mère alors que le second portait sur l'alimentation au Canada. Ensuite, nous leur avons demandé de décrire leurs dessins puis d'exprimer ce qu'ils représentaient pour eux. Nous en avons aussi profité pour approfondir quelques thèmes. Ces discussions ont été enregistrées, transcrites et analysées thématiquement avec NVivo.

Recommandations et conclusion : L'utilisation d'exemples visuels a apporté de l'ampleur et de la profondeur à notre

compréhension de la perspective des enfants de l'acculturation alimentaire. Le fait de demander aux enfants de faire une description des dessins nous a permis d'enrichir cette compréhension, surtout pour les enfants ayant moins de talent artistique et pour les domaines difficiles à dessiner. Cette méthode a également permis d'occuper les enfants pendant l'entrevue avec leur mère tout en collectant des informations pertinentes sur la situation alimentaire familiale. Financement du CNFS-volet Université d'Ottawa et de l'Université d'Ottawa.

SCHOOL NUTRITION

Web-based pictorial recall tool assessing the food intake and physical activity level of preschool children (3–4 years old) attending child care

Luma Al-Shubbak*, MScFN, RD, CQM, CSNM, Alicia C. Garcia, PhD, RD, CFE. Division of Food and Nutritional Sciences, Brescia University College, The University of Western Ontario, London, ON [R]

Objectives: Little is known about the food intake and physical activity behaviors of preschool children attending daycare. Studies show that preschool children cared for by non-parents are at risk of obesity and are more likely to be obese in kindergarten. There is a lack of valid nutrient assessment tools for this population. The study developed/tested pictorial web-based recall tool to assess food intake and physical activity of preschool children in daycare. The study also evaluated the compliance of the daycare centers with the nutrition and physical activity recommendations for this age group.

Methods: Twenty-two preschoolers aged 3–4 years completed the survey for 3 lunch meals. Actual physical activity in the centers was measured with pedometers. Height, weight and waist circumference were collected. Values were compared with recommended guidelines for intake and physical activity.

Results: Compared with weighed-food records, 50% of participants accurately (100%) recalled the foods they eat, 27% underestimated their intake, and 23% were within 50%–75% accuracy. Compared with recommendations, protein, riboflavin, niacin, vitamin B12 and vitamin C were significantly higher (110%–209%) than the recommendations ($P < 0.05$). Fiber, vitamin D, and potassium were 50% lower than the recommendations. The other nutrients were within $\pm 10\%$ of acceptable levels. Children spent about 6 hours in the daycare center and spent approximately one hour on outdoor physical activities with an average of 2896 steps (45%). In compliance with the recommendations, the 4 centers met the suggested minimum nutrition requirements of the 1990 Day Nurseries Act.

Implications and recommendations: Valid assessment tools for this population are lacking and this tool is a useful

contribution. Findings from the study will aid in developing nutrition and physical activity programs for daycare centers. Childcare centers could benefit from menu planning with standardized recipes, nutrition education and food skills training for their staff, and physical activity programming.

Diet quality of lunches packed and eaten by elementary school children assessed with Canada's Food Guide and the Canadian Healthy Eating Index

Nicole A. Jackson^{*1}, Lisa J. Neilson¹, Marina I. Salvadori², Jamie A. Seabrook^{1,3}, Lesley A. Macaskill¹, Paula D.N. Dworatzek^{1,4}. ¹Division of Food and Nutritional Sciences, Brescia University College at Western University, London, ON; ²Department of Paediatrics, Schulich School of Medicine and Dentistry, Western University, London, ON; ³Children's Health Research Institute, London, ON; ⁴Schulich Interfaculty Program in Public Health, Schulich School of Medicine and Dentistry, Western University, London, ON [R]

Objective: To describe the quality of children's home-packed lunches in elementary schools.

Methods: Our cross-sectional sample consisted of 168 students in grades 3 and 4, from 10 elementary schools in Southwestern Ontario, aged 7–10 years. All foods packed and consumed during the school day were recorded by direct observation and diet quality was assessed using Canada's Food Guide (CFG), standard macro- and micronutrient methods, and the Canadian Healthy Eating Index (C-HEI).

Results: The proportion of children whose consumption met one-third of CFG recommendations for vegetables and fruit was poor at 31%. Only 41% of home-packed lunches contained vegetables, while 93% had a snack. Even when the contents of packed lunches contained vegetables, they were not consumed in their entirety, and students showed a preference for consuming snack items i.e., 20% of vegetables were left uneaten, compared to only 11% of snacks. Less than 7% of students met one-third of recommendations for fibre, potassium, and vitamin D. Intake of calcium, zinc, vitamin A (in females), and phosphorus also fell below recommendations. Nutrients that exceeded recommended intake included sodium, energy from total sugar, fat and saturated fat. The mean C-HEI scores for packed and eaten lunches were 47.2 ± 14.3 and 46.0 ± 14.4 respectively, out of a maximum score of 100. For packed lunches, nearly 55% of students' scores represented a 'low quality' diet (<50 points) and less than 1% represented a 'high quality' diet (>80 points). Of the lunches consumed, almost 60% of students' scores represented a 'low quality diet' and no students' scores were in the range of a high quality diet.

Implications and Conclusions: The diet quality of food items being packed and consumed by elementary students are predominantly 'low quality', which suggests a need for the development and delivery of interventions that focus on improving the quality of children's home-packed lunches.

Changes in children's lunch-time food group intakes over 5 years of school nutrition policy implementation: Differences according to food source

T. McComber T^{*1}, W Montelpare W¹, P Veugelers², J Taylor^{*}.
¹University of Prince Edward Island, Charlottetown, PE; ²University of Alberta, Edmonton [R]

Objective: to assess food group consumption during school lunch over five years of school nutrition policy (SNP) implementation according to food source (home versus school).

Methods: Grade 5/6 elementary school children in Prince Edward Island completed validated lunch time food records during an in-class survey conducted in 2007 (n = 1992), 2010 (n = 1625) and 2012 (n = 1564) (61% response rate). Foods were classified into Canada's Food Guide and 16 sub-groupings based on similar nutrient composition (e.g. fat, whole grain). Analysis of variance was used to evaluate differences in food group intakes according to food source over the three time periods.

Results: The number of low fat whole Grain Products (LFWG) servings sourced from school and home both increased from 2007–2012 ($P < 0.0001$). School sources of high fat non-whole grains increased ($P < 0.004$) while home sources of high fat whole grains increased ($P < 0.0002$) from 2007–2012. Low fat Vegetables and Fruit (LFVF) from school decreased over the same period ($P < 0.02$).

Implications and Conclusions: Increased consumption of LFWG products consumed as part of school lunch suggest that the SNP is having a targeted impact in terms of whole wheat pizza crust and whole wheat submarine rolls. Increases in consumption of higher fat grains from home and school, and decreases in LFVF at school suggest that parent education and closer adherence to the SNP is needed.

TECHNOLOGY AND FOOD SELECTION, AND FOOD SAFETY

Content analysis of Twitter messages: #WhatsBeingSaid about supplemented and functional food products?

D Hawthorne¹, MJ Cooper². ¹Research Division, Division of Food and Nutritional Sciences, Brescia University College, Western University, London, ON; ²Health Canada, Ottawa, ON [R]

Objectives: Monitoring social media is important to evaluate knowledge translation and the potential influence this may hold on behaviour, especially with respect to a new category of foods known as 'supplemented foods'. These food-form products were previously regulated by Health Canada as Natural Health Products and were transitioned to the Food and Drugs Regulations in 2010. The objective of this research was to examine Twitter messages to assess the types and tone of information, consumers' perceptions, and discussions regarding these products.

Methods: A deductive content analysis methodology was used to quantitatively and qualitatively examine media messages. The NCapture feature for NVIVO was used to capture a random sample of tweets posted between October 27 and Nov 4,

2014. Information obtained from the tweet included the date and time of the tweet, text of tweet, twitter handle, tone and purpose of the tweet, and user category.

Results: A total of 509 tweets were retrieved. The 'energy drink' topic dominated with 63.0% of messages, while 8.3% of messages were regarding vitamin waters and 6% described a branded enhanced coffee drink. The majority of users were the general public/consumers (77.6%), with industry generating the second highest percentage of tweets (5.5%). Over three-quarters (76.0%) of all tweets pertained to 'personal experience/opinion/interest', with 5.0%, 4.0% 3.1% and 1.8%, respectively, related to 'medication/alcohol/ drugs/hangovers', 'school', 'work' and a 'need' for the product. The majority of messages (43%) had a neutral tone, with a slightly higher percentage exhibiting a positive rather than a negative tone (27.0% vs. 21.0%).

Implications and Conclusions: The findings from this study provide important information concerning what is being discussed within social media by the general public/consumers and industry regarding the 'supplemented foods' category. This work could help to inform education efforts around these products.

VULNERABLE GROUPS AND THEIR NUTRITIONAL NEEDS

Menu marking assistance in long term care units at UBC Hospital

Mohsen T. Saberi^{*1}, Amanda Coulter². ¹Sodexo Canada at UBC Hospital; ²Vancouver BC, Vancouver Coastal Health Authority (VCHA) Dietetic Program, Vancouver BC [E]

Purpose: The purpose of this study was to assess the effectiveness of menu marking assistance to residents in Long Term Care (LTC) in: Residents' satisfaction, nutritional requirement achievements, and food waste reduction. Menus in LTC often provide the nutritional requirements of the residents, but rarely the residents eat enough to achieve their needs. This is mainly due to limited time allocated to Registered Dietitians (RD) to visit and follow up.

Process: Through collaboration with the RDs and Residential Care Coordinators (RCC), Food Services (FS) visited and offered assistance to residents to mark their 28-day cycle selective menu. This program builds a stronger multidisciplinary team and enables the FS department to accomplish the three stated goals. Five residents were chosen, at the end of each meal, FS collected their trays and analyzed each tray for waste, nutrient content and consumption, for 7 days.

Project summary: Results of each resident's tray were analyzed in Computrition and compared to: VCHA food survey in LTC for residents' satisfaction, Eating Well with Canada's Food Guide for nutrient achievements, and VCHA/Sodexo Biannual waste audit for food waste. Average waste for solid food only, was 32.9% and 36.1% for the whole tray, compared to Sodexo's biannual waste audit average of 14% and 10% respectively. The recommended dietary allowance for

carbohydrate, protein, fat, and iron was offered, but not consumed at 100%.

Recommendations and Conclusions: In residential care, by creating a warm and friendly one to one environment, closer-to-service menu selection assistance (dining room), and time allocation, FS will achieve higher residents' satisfaction, facilitate the fulfillment of their nutritional needs, and reduce food waste.

Are we over- or under-feeding residents in Long-Term Care?

J. Hicks^{*1}, S. Malo², S. Omori², H. Rana¹, D. Sutherland¹, J. Luk¹, J. Madill¹, C. O'Connor¹. ¹Food and Nutritional Sciences, Brescia University College, London, ON; ²Nutritional Management Services, London, ON [R]

Long-Term Care Home (LTCH) menus must meet the Dietary Reference Intakes (DRIs) for adults >70 years and Canada's Food Guide servings (CFG) for adults ≥51 years. However, the average age of LTCH residents is >80 years.

Objectives: To quantify the energy requirements for maintenance of body weight and to determine the adequacy of food intake to meet the DRIs among LTCH residents.

Methods: Weight-stable residents living in two LTCHs who met inclusion criteria were invited to participate. Three days of food intake were quantified using direct observation and nutrient analysis. Resting metabolic rate (RMR) was measured using indirect calorimetry. Energy intake was compared to measured RMR and nutrient intake was compared to the DRIs for adults >70 years.

Results: Forty-four residents participated. The food provided met all CFG servings and DRIs, resulting in a mean energy provision of 2417 ± 107 kcal/d; however, actual energy intake was 1605 ± 326 kcal/d. All residents remained weight-stable during the data collection period despite consuming less energy than was provided. Conversely, more than 50 percent of the residents had inadequate intakes of protein, fibre, vitamins A, D, E, K, B6, folate, pantothenic acid, calcium, magnesium, potassium, zinc, and fluid when compared to the DRIs. RMR was measured for 20 residents. Mean RMR was 1182 ± 317 kcal per 24 hours, with a mean factor of 1.45 ± 0.44 accounting for additional activity and stress-related energy expenditure.

Implications and Conclusions: The results of this study suggest that LTCH residents' energy needs are much lower than what current menu requirements mandate. The use of CFG for menu planning in LTCHs results in excessive energy provision, while low food intake results in inadequate nutrient consumption to meet the DRIs.

Trajectories of nutritional risk of survivors of the Manitoba Follow-up Study

CO Lengyel^{*1}, RB Tate², D Jiang². ¹Department of Human Nutritional Sciences, Faculty of Agricultural and Food Sciences, University of Manitoba; ²Manitoba Follow-up Study, Department of Community Health Sciences, Faculty of Health

Sciences, College of Medicine, University of Manitoba, Winnipeg, MB [R]

Objectives: To identify patterns of nutritional risk among older men participating in the Manitoba Follow-up Study (MFUS) over a four-year period and to project their survival rates over the next two and a half years.

Methods: In 2007, MFUS began to study nutritional risk and its relation to successful aging of its study members. Three hundred and thirty-six survivors of the Manitoba Follow-up Study (MFUS) cohort with a mean age of 90.0 years (3.1 SD) from 2007–2011 were included in the analysis. Four years of nutritional risk data (five waves) from the MFUS survivor cohort were used to calculate latent class growth analysis (LCGA).

Results: Of the participants, 66.7% were married, and 29.5% lived alone regardless of marital status. Five distinct developmental trajectories for nutrition risk score were identified [High-Increase (HI); High (H); Moderate-Increase (MI); Moderate (M); Low (L)]. Significant statistical differences were found between all groups for mental health ($P = .02$), physical health ($P = <.001$), perception of aging successfully ($P = .04$) and living alone ($P = <.001$). The five groups showed the most number of differences in appetite, intake of meat and alternatives, and vegetables and fruit, weight change, skipping meals and eating with others. Men in the HI group were two times more likely to die within a 2 1/2 year period compared to men in the L group (hazard rate = 2.33, $P = .07$). In terms of survival patterns, three distinct patterns emerged showing that of the men, 20% L, 30% MI and 50% HI died within 2 1/2 years.

Implications and Conclusions: Poor nutritional risk score is associated with higher risk of mortality for very old men over a short period of time. Timely nutritional assessments by health professionals to identify older men at nutritional risk and subsequent nutrition education and follow-up are important in changing one's mortality trajectory.

Unheard voices of Iranian immigrants with type 2 diabetes: a Canadian focused ethnographic study

Mahsa Jessri^{*1}, Parnaz Sadighi², Nastaran Toofani³, Lynn Woods⁴, Mary L'Abbe^{*1}. ¹Department of Nutritional Sciences, Faculty of Medicine, University of Toronto, Toronto, ON; ²East Greater Toronto Area (GTA) Family Health Team, Toronto, ON; ³Diabetes program, Rexdale Community Health Centre, Etobicoke, ON; ⁴Diabetes Education Program, Mackenzie Health, Vaughan, ON [R]

Objectives: The Middle Eastern population (Iranians and Arabs) is the fastest growing immigrant group into Canada. According to the World Health Organization they will be experiencing the greatest relative increase in type 2 diabetes rates in the next 25 years. The aim of this study was to explore the diabetes self-management needs, experiences, challenges and barriers among this population and their perceptions of

the healthcare system, community and society in their self-management decisions after immigration to Canada.

Methods: Iranian immigrants ($n = 22$) were recruited from diabetes education centres (DEC) in the Greater Toronto Area, Canada. Four single-sex focus groups were conducted in Farsi using a focused ethnographic approach to guide concurrent data collection and analysis. Survey data were collected via pre-tested questionnaires. To preserve the linguistic authenticity, data were transcribed in Farsi and inductive content analyses were performed to capture the emerging issues.

Results: Complex and intertwined challenges were found among the different themes. Through constant comparison, 4 layers of influence emerged describing patients' process of decision making: culture/society, healthcare system, family/friends and individual barriers. Cultural beliefs were umbrella themes woven throughout all discussions. Patients were dissatisfied with the Canadian healthcare system and viewed it negatively, mainly due to lack of receiving proper education, language barriers, high cost of treatments, lack of Middle Eastern DECs, lack of cultural competency of health personnel, referrals to commercial diets, and a sense of lack of mutual trust and confidence.

Implications and Conclusions: Providing culturally competent care to Middle Eastern diabetic patients requires consideration of the social context of disease management. Establishing DECs geared towards Middle Eastern culture and language and educating healthcare professionals about cultural competency may increase trust and usage of Canadian healthcare system and eventually lead to increased awareness of and adherence to diabetes self-management recommendations, especially among this emerging high-risk group.

WELLNESS AND PUBLIC HEALTH

Traffic-light labels could potentially reduce population intakes of calories, fat, saturated fat, and sodium

TE Emrich^{*1}, Y Qi², WY Lou², MR L'Abbe¹. ¹Department of Nutritional Sciences, University of Toronto, Toronto, ON; ²Dalla Lana School of Public Health, University of Toronto, Toronto, ON [R]

Traffic-light labelling on packaged foods has been proposed as a public health intervention to improve the dietary intakes of consumers.

Objective: To model the potential impact of avoiding foods with red traffic lights on the label on the energy, total fat, saturated fat, sodium, and sugar intakes of Canadian adults.

Methods: The subjects were Canadian adults aged 19 and older ($n = 19915$) who responded to the Canadian Community Health Survey (CCHS), Cycle 2.2. The nutrient levels in foods consumed by Canadians in CCHS were profiled using the United Kingdom's criteria for traffic light labelling. Whenever possible, foods assigned a red traffic light for one or more of the profiled nutrients were replaced with a similar food with

nutrient levels not assigned any red traffic lights. Average intakes of calories, total fat, saturated fat, sodium, and sugar under the traffic light scenario were compared with actual intakes of calories and these nutrients (baseline) reported in CCHS.

Results: Under the traffic light scenario, Canadians' intake of energy, total fat, saturated fat, and sodium were significantly reduced compared to baseline. Calorie intake was reduced by 5%, total fat 13%, saturated fat 14%, and sodium 6%.

Implications and Conclusions: Traffic-light labelling on packaged food could potentially reduce population intakes of calories, fat, saturated fat, and sodium. Governments and policy makers should consider the adoption of traffic light labelling as a population level intervention to improve dietary intakes and chronic disease risk.

Reliability assessment of the CHEERS child care self-assessment tool

LMZ Lafave^{*1}, S Tyminski², D Hoy², B Dexter², T Riege², L Seguin². ¹Mount Royal University, Calgary, AB; ²Alberta Health Services, Calgary, AB [R]

Objectives: The child care environment has the potential to profoundly influence early dietary behaviours. Measuring gaps, weaknesses, and strengths of child care eating environments is an important function of public health nutrition support; however there is a lack of a valid and reliable assessment tool for this Canadian population. The objective of this project is to assess the reliability of the CHEERS (creating healthy eating environments survey) self-assessment tool for child cares.

Methods: Directors from child cares representing centres across Alberta were invited to participate in the study. The director and an early child care educator from respective centres filled out and returned the CHEERS tool independently (interrater reliability, two independent assessments of the same childcare). A subset of the childcares repeated the survey submission two weeks later (intrarater reliability, child care scored by the same educator at two time points). Reliability was assessed (via SPSS) by Intraclass Correlation (ICC) and Cronbach α on the overall tool as well as the five constructs: foods served, healthy eating program planning, healthy eating environment, physical activity environment, and body image.

Results: Survey return rate was 69% ($n = 102$ child cares). The reliability scores for the first four constructs ranged from 0.51–0.80 (interrater ICC) and 0.84–0.89 (intrarater ICC). Cronbach α for these constructs ranged from 0.73–0.79. The body image construct scored poorly for internal consistency, (0.48) and intra-rater reliability (0.42). The overall Cronbach α for the CHEERS tool (without the body image construct) was 0.90 with an ICC of 0.70 and 0.89 for interrater and intrarater reliability, respectively.

Implications and Conclusions: The CHEERS tool is reliable with high internal consistency of items. This will be a valuable tool for public health dietitians, researchers and child care

centres, providing individualized assessment to enhance the healthy eating environment of Canadian child care centres.

Bringing menu labelling to independent restaurants: a feasibility assessment

Tara Brown, MHSc, RD^{*1}, Anne Birks, MHSc, RD². ¹Toronto Public Health, Chronic Disease and Injury Prevention; ²Toronto Public Health, Chronic Disease and Injury Prevention [E]

Purpose: To explore the feasibility of menu labelling among independent restaurants; to identify facilitators and barriers to menu labelling for both Toronto Public Health and independent restaurants; and, to develop a model for TPH to support menu labelling among independent restaurants.

Process: We used the following methods to address the study's objectives: (1) interviews with restaurant operators who completed the project and those who dropped out (n = maximum 22); (2) focus groups and interviews with TPH staff and management; (3) TPH and restaurant budget and activity tracking; and (4) a survey of participating restaurant patrons' reactions to menu labelling. The diversity of restaurants (size, type, cuisine, and menu length) allows us to examine differences across settings. Data was collected from August 2013 to January 2015. Preliminary results show that menu labelling is highly resource intensive for TPH and restaurants but that there are benefits for both. We will report on the final evaluation results and implications for moving forward to create healthier restaurant environments in Toronto.

Project Summary: Public health interventions to promote healthy restaurant environments need to include independent operators as they constitute a substantial portion of the restaurant market. This comprehensive study will contribute to the evidence on the feasibility of menu labelling for this group of businesses. Lessons learned from this project could increase the likelihood of success for other public health units considering a similar intervention.

Conclusions: This initiative will contribute to ongoing dialogue on the value of menu labelling as a public health intervention with independent restaurants not covered by potential menu labelling legislation. It will highlight the benefits, opportunities, and challenges for both independent restaurants operating in a highly competitive, profit-driven environment, and for a public health unit whose primary goal is to promote healthier restaurant environments while maintaining positive relations with this sector.

Better Together: How BC is helping families to eat together more often

Sydney Massey, MPH, RD^{*}, Rola Zahr, RD, Nicole Spencer, MEd, RD, Lynne Sawchuk, MPE, RD. BC Dairy Association [E]

Purpose: The goal of this session is to provide insight into the family meal and an initiative designed to promote eating together. This can guide dietitians in the messaging they use when creating communications, resources or campaigns around family meals.

Content: Family meals have received attention in both popular press and in public health campaigns as an important means of promoting children's health, from improving nutritional intake to improving social adjustment. But what is the impact of these public health messages or campaigns on families? Better Together BC is a health promotion initiative aimed at supporting eating together using various social media channels. The initiative is based on a theoretical model that provides insights into the factors and routines that are most likely to lead to eating together. Research using this theoretical model revealed that involving kids in the kitchen is an important precursor to eating meals together. Messages and contests created by Better Together are built around the key insights from this research, conducted at the beginning of the project in 2009. Six years later we reflect on the success of this initiative.

Project summary: The social media network continues to grow exponentially each year. The social media approach amplifies our reach to tens of thousands of individuals, via shared messages. Targeted content is reaching our ideal audience of women aged 25–55. Our annual Hands-on Cook-off Contest reinforces the behavior of cooking together, whether it is a multigenerational activity, important for young children, or between youth. New research examines the impact the initiative is having on participants.

Recommendations and conclusions: Using the insights from a theoretical model can help craft messages and campaigns that are designed to tap into the underlying motivations for mealtime behaviors. These messages are having a positive effect on participants.

Raising our healthy kids: short videos for parents

Jane Bellman MEd, RD^{*1}, Rachel Gauk², Kerri Staden RD^{*1}, Jayne Thirsk PhD, RD, FDC¹, Sheila Tyminski MEd, RD³, Kay Watson-Jarvis MNS, FDC^{*1}. ¹Dietitians of Canada; ²Shadow Light Productions; ³Alberta Health Services [R]

Purpose: To produce a library of open access, short, high quality video content on healthy living based on best evidence to support families, individuals and communities to live healthier lives.

Process: Building on experience with four demonstration videos (CTV reported 50–100 viewings per week; parent feedback: 63% learned something new; 100% messages were important; 82% reported they 'liked very much' or 'liked'; 64% stated an intention for behaviour change; feedback from parenting group leaders in Calgary area: messages are short, concise, simple and familiar, enabling easy use in parenting groups) we undertook to produce more. We engaged a network of strategic alliances to validate interest in and support for the project and its outcome; established project partners and governance; secured funding; established administrative and operational processes and work plans including evaluation and dissemination plans. Subject areas for the topics include: nutrition and healthy eating; active living and play; positive parenting; oral health; injury prevention; and mental health promotion. In addition, there will be videos that

provide an Aboriginal context. Nutrition topics used PEN® as one of the evidentiary sources.

Project Summary: Phase 1 (35 videos) is completed and mid-way evaluations are in progress. Evaluation of development and production processes confirmed challenges of working under a tight timeline with changing procedures, and multiple organizations and participants. Recommendations included: regular communication on the whole project with individual participants; more relaxed time lines and clarity regarding

roles and responsibilities. Results of client survey evaluations and focus groups will be available for June. EatRight Ontario has committed to translate 23 nutrition videos into French.

Recommendations and Conclusions: Implications of online applications for delivery of health education are enormous and numerous examples already exist. We hope to learn the value of short, evidence-based, impactful videos in informing parents and other care givers of young children about healthy living practices.

INTERN RESEARCH PRESENTATIONS ABSTRACTS DC CONFERENCE-QUEBEC CITY 4–6 JUNE 2015

STUDENT SYMPOSIUM–ORAL ABSTRACTS

An investigation of the relationship between illness severity and energy expenditure in patients with cirrhosis who are candidates for liver transplantation

Cindy Fajardo Gaviria, Morgan Medal Award National Winner 2015

Background: Hypermetabolism is a known contributor to malnutrition in patients with end-stage liver disease (ESLD) and it often goes undetected. Indirect calorimetry (IC) is the gold standard tool for measuring resting energy expenditure (REE) and detecting hypermetabolism. However, IC is a high-cost, time-intensive tool which is not readily available to many health care institutions. Although predictive equations are still widely used by clinicians, they often underestimate true caloric requirements in this patient population.

Purpose: (1) To determine if illness severity, as defined by the MELD-Na score, is associated with increases in measured REE (mREE) or hypermetabolism in patients with ESLD. (2) To quantify a stress factor to enhance the accuracy of energy requirement predictions in the absence of IC.

Methods: Data from forty patients on the waitlist for liver transplantation were retrospectively assessed. MELD-Na was calculated based on serum sodium, creatinine, total bilirubin and INR; mREE was measured with IC using a metabolic cart; and predicted REE was determined by Harris-Benedict Equations (HBE). One-way ANOVA and Student *t* tests were used to compare the means of normally distributed variables.

Results: HBE underestimated true energy expenditure in 43% of patients. Hypermetabolic patients demonstrated the highest deviation from HBE (26%), closely followed by patients with a BMI <18.5 kg/m² (20%). The calculated average stress factor was 1.14. However, 43% of patients required a 20%–51% addition to HBE estimates to meet their measured caloric needs. Illness severity scores were not associated with mREE or prevalence of hypermetabolism.

Conclusions: These findings suggest that a stress factor of 1.2 to 1.3 added to HBE should be considered to more accurately predict the caloric requirements of stable ESLD patients when

IC is not accessible. Illness severity by MELD-Na does not appear to be a useful marker in identifying patients who are hypermetabolic and at higher risk of underfeeding.

NutriSTEP use in a rural community setting and implications for public health and primary health care practice

Jenessa Dalton, BSc¹, Kathryn Forsyth RD², Laura Needham RD², Lynda Bumstead RD, MHSc², Lindsay Wonnacott, MPH, BHSc². ¹Dietetic Intern; ²Diploma in Dietetic Education and Practical Training, Brescia University College, London, ON

Background: Grey Bruce Health Unit (GBHU) is currently working towards a comprehensive implementation strategy of NutriSTEP (Nutrition Screening Tool for Every Preschooler), a standardized and validated nutrition screening tool for toddlers (aged 18 to 35 months) and preschoolers (aged 3 to 5 years). Primary health care (PHC) partners are considered to be integral to the successful implementation of NutriSTEP in communities including consistent screening and appropriate referrals.

Objectives: The primary objective was to understand the perceived barriers and enablers as identified by PHC sites regarding NutriSTEP use. The secondary objective is to examine how PHC sites interpret results, provide feedback to parents and initiate referrals when needed. The results from this project will inform a Grey Bruce approach for implementing standardized screening tools such as NutriSTEP.

Methods: Key informant semi-structured interviews took place throughout Grey Bruce, in-person (9) and by telephone (1) with PHC sites. Interview transcripts were assessed using qualitative thematic content analysis to identify, code and categorize the primary patterns and recurring themes in the data.

Results: Of the ten PHC sites interviewed, five had not used NutriSTEP and six did not have a Registered Dietitian employed. Of the four PHC sites that had a Registered Dietitian on staff, all were using NutriSTEP. The main perceived barriers to NutriSTEP use were lack of time and lack of target group. The perceived enablers to NutriSTEP use were education/training, Information Technology (IT) support,

nutrition expertise, ease of tool, and inter-professional collaboration.

Implications and Conclusions: The results suggest that the successful implementation of NutriSTEP in rural PHC sites depends on a strong relationship with Public Health for educational and training purposes, having a Registered Dietitian on staff, internal IT support, well-developed referral processes, and inter-professional collaboration among healthcare professionals.

Lessons learned from SMART nutritional goals used by men and women with prediabetes in a lifestyle intervention program at the STAR Family Health Team

Mathilde Lavigne-Robichaud¹, Adrienne Vermeer², Sarita Azzi³, Sean Blane², Isabelle Giroux³. ¹Dietetic Intern, University of Ottawa, Ontario; ²STAR Family Health Team, Stratford and Tavistock, Ontario; ³Faculty of Health Sciences, University of Ottawa, Ottawa

Objectives: To determine if differences were observed between men and women when using the SMART nutrition goal setting approach.

Methods: Rural adults, identified with prediabetes were invited to participate in a 6-month intervention program with emphasis on healthy lifestyle. All participants were offered the same education on SMART goals setting and were invited to formulate, on a voluntary basis, a monthly nutrition goal. When formulating a SMART goal, they were asked to qualify, on a scale of 0 to 10, their confidence level as well as the achievement level of the established goal.

Results: Thirty-nine participants (22 men, 17 women) aged 61.3 ± 7.3 attended an average of 7.7 ± 1.2 out of 9 visits. To date, preliminary results show that 39 high attendees (≥ 4 visits) have set 162 SMART nutritional goals overall. Men have formulated an average of 4.0 ± 1.7 SMART nutrition goals, while the women's average is 4.4 ± 1.8 ($P = NS$). The confidence level in achieving formulated goals was also very similar for men and women (6.9 ± 1.5 vs 6.8 ± 1.9 , $P = NS$). Although, men were trending toward more success at achieving their SMART nutritional goals than women, no significant differences were observed between the average achievement levels they declared (6.7 ± 2.6 vs 5.8 ± 2.9).

Implications and conclusions: Preliminary results demonstrate that, on average, men and women participated equally in the formulation of SMART nutrition goals. The confidence in and achievement of the SMART nutritional goals of

participants in the lifestyle intervention program could imply that these nutritional self-efficacy strategy components were not different for men and women. Although a deeper analysis of those goals could reveal differences in the type of goals chosen by men and women, these results suggest that it is reasonable to teach and integrate the SMART nutrition-oriented goal approach in the same manner for both sexes. Funding: Public Health Agency of Canada.

Understanding perceptions of food access issues and responding initiatives in Fort Providence, NWT

Meagan Ann O'Hare, University of Ottawa, Masters of Arts Candidate in Human Kinetics

Objectives: In Northern Canada, prolonged exposures to a number of stressors impact the ability of remote, Indigenous communities to maintain food security. I will discuss the challenges and opportunities a community in the Northwest Territories faces in achieving regular access to nutritious land-based and market foods. My objectives are to (a) highlight the perceptions of food access in the community, (b) examine the initiatives developed within the local school to create greater access to foods and, (c) discuss the structure of a successful food procurement program.

Methods: This research is based on six months of ethnographic research in Fort Providence, Northwest Territories. The research is community-based with direct collaboration with key representatives to identify needs and address locally defined issues of food access. The programs examined are developed within the school and largely community-driven.

Results: The results are detailed accounts of the perceived challenges pertaining to food security, access and land-based food procurement. Interviews with elders, parents and community champions detail the sociocultural, economic and environmental barriers to achieving food security. Further, the programs examined suggest opportunity for the development of land-based food procurement skills for youth and opportunity for community building.

Implications and Conclusions: Local, community driven, land-based food procurement programs are helpful in responding to issues of food access and contribute to overall community well-being. They promote education, cultural continuity, community and skill building. It is found that the viability of the programs are largely dependent on funding and access to human capacity causing the sustainability of the programs to be vulnerable to external factors.