Canadian Foundation for Dietetic Research

Dietetic Research Event: June 8 and 9, 2017

St John's, Newfoundland was the host city of the 2017 Dietitians of Canada Annual Conference.

Through the support of Dietitians of Canada and CFDR, the 2017 event was both an exciting and informative exchange of research and experience-sharing efforts that inspired attendees. The submissions for this year's Canadian Foundation for Dietetic Research (CFDR) event represented the diversity of dietetic research conducted within Canada. The topics highlighted from this year's abstracts included: Clinical Research; Community-based Nutritional Care; Determinants of Food Choice; Dietary Intake; Dietetic Practice and Education; Food Security; Nutrition and Health Education; Nutritional Assessment and Therapy; Nutrition Attitudes; Nutrition Strategy Development Patient Services; Professional Development; Vulnerable Groups and their Nutritional Needs; and, Wellness and Public Health.

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. These presentations offered the newest insights into important research findings that apply to dietetic practice. Attendance at the research presentations was approximately 200 and 125 on June 9 and 10, respectively.

This research event would not be possible without the commitment and dedication of many people. On behalf of DC and CFDR, we would like to extend a special thank you to members of our abstract review committee: Susan Campisi (University of Toronto); Elaine Cawadias (Dietitian, Retired); Andrea Glenn (St. Francis Xavier University); Mahsa Jessri (University of Ottawa); Jessica Lieffers (University of Alberta); and Janet Madill (Brescia College).

We would also like to thank all of our moderators, Jane Bellman (DC), Pierrette Buklis (CFDR Board), Marcia Cooper (Health Canada), Jenny Gusba (CFDR Board), Brenda Hartman (Brescia College), Sarah Hewko (CFDR Board Chair), Lisa Mina (CFDR Board), Misty Rossiter (University of Prince Edward Island), Lee Rysdale (Northern Ontario School of Medicine), Pat Vanderkooy (DC), and Heather Wile (CFDR Board), who kept our research presentation sessions on time during the conference. Finally, a special thank you to Janis Randall Simpson and Michelle Naraine at CFDR for their assistance and support throughout the review process.

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

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These abstracts were accepted through a peer-review process for presentation.
*Indicates the Presenter [R] = Research abstract [E] = Experience-sharing abstract

CLINICAL RESEARCH (INCLUDING OUTCOMES OF INTERVENTION)

Behavioral feeding problems of normally developing children under 4 years of age: A chart review to differentiate complex cases

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Introduction: Managing feeding difficulties in childhood is poorly understood by parents and health care professionals. Approximately 25%–45% of children experience feeding difficulties with potential unhealthy outcomes such as growth failure, nutrient deficiencies, and inappropriate motor skills development.

Objectives: This study identified common problematic feeding behaviors of children <4 years of age referred to a specialized clinic and determined associations between responsiveness to treatment and number of problematic behaviors and clinic visits.

Methods: Secondary data collected by trained researchers from 106 medical charts of patients seen over the last 5 years using appropriate data abstraction sheets included age, sex, anthropometric measures, medical history, dietary history, and feeding-related behaviors. Clinical improvement in feeding behavior was defined as decreased frequency or cessation of a reported problematic feeding behavior. Responsive patients demonstrated such improvements within the first 4 appointments and those with no progress were considered nonresponsive or complex cases. Data analysis included *t* tests to determine associations between responsiveness to treatment and the number of problematic behaviors, frequency of clinic visits and presence of a medical condition.

Results: Common problematic feeding behaviors included picky eating, refusal of solid foods, excessive fluid intake and poor appetite and the sum of all behaviors, not a single one, predicted case severity. The nonresponsive group differed significantly from the responsive group with a higher number of

problematic feeding behaviors ($P < 0.0001$), more frequent clinic visits ($P < 0.0001$) and more concurrent medical condition ($P < 0.0001$).

Conclusions: Establishing better definitions of problematic feeding behaviors and monitoring total behaviors and frequency of clinic visits may help determine complexity of cases. The study addressed gaps in the literature by characterizing the target population and acquiring data to better establish consistent nomenclature and categorization of feeding difficulties which would help design a future screening and ranking tool for appropriate intervention protocols.

Can a regular hospital diet versus low microbial diet lessen weight loss following an allogeneic hematopoietic stem cell transplant?

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Introduction: Individuals who receive a hematopoietic stem cell transplant (HSCT) are initially immunocompromised and potentially at greater risk for food-related infections. Historically, these patients received a low microbial diet (LMD) to minimize this risk of food-borne infections. In August 2010, the practice at our centre was changed and all HSCT patients were given a liberalized, more palatable regular hospital diet (REG) that met government food safety guidelines.

Objective: Determine whether a REG diet attenuates body mass index (BMI) loss post HSCT, compared to a LMD diet.

Methods: A retrospective chart audit of 50 individuals who received a HSCT was performed to generate a sample of 25 consecutive patients who received a LMD (March–June 2010) or a REG diet (March–June 2011) during their hospital stay. The 2 groups were compared on demographic and clinical characteristics to ensure groups were matched. The primary study outcome was BMI (kg/m^2), computed at transplant, discharge, and 1 week post discharge. BMI values were tested using 2-way ANOVA (diet × time).

Results: Data from 48 patients (24 LMD and 24 REG) were analyzed (1 patient in each group died during their inpatient stay). There were no group differences on age, sex, diagnosis, donor type (related/unrelated), length of stay post HSCT (transplant to discharge) or total length of stay (admit to discharge). Both groups had a statistically significant but similar BMI loss, post HSCT (at transplant: LMD [25.7 ± 3.6], REG [25.9 ± 4.8]; at discharge: LMD [24.5 ± 3.2], REG [24.7 ± 4.3]; at 1 week post discharge: LMD [24.3 ± 3.2], REG [24.5 ± 4.4]).

Conclusions: The liberalized REG diet did not significantly lessen BMI loss but neither did it increase weight loss. A REG diet remains the diet for HSCT patients at our centre because it is more palatable to patients, easier for patients to manage upon discharge and easier/less costly for the institution during their inpatient stay.

Diet and prostate cancer program: Evaluation and recommendations (DAPPER)

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Introduction: Diet may be an important factor in prostate cancer incidence as well as recurrence although the relationship remains unclear. A high BMI is associated with higher recurrence rates after radical prostectomy or radiation therapy. Evidence suggests that reduction in biomarkers, such as insulin growth factor hormone, which may influence recurrence of prostate cancer can be achieved with weight loss of only 5%–10%. Research indicates that men with prostate cancer are very motivated to make changes to their diet and suggests use of specialized dietary information that would convey the how and why for dietary changes to optimize adoption. However, very little is understood about what types of interventions in conveying this information may be effective in increasing nutrition knowledge and facilitating healthy dietary changes that may promote healthy body weights.

Objective: To evaluate effectiveness and satisfaction of a weekly diet and prostate group education program in meeting the information needs in promoting healthy body weights.

Methods: Forty-eight men with prostate cancer were recruited for the DAPPER study using convenience sampling and the men attended 1 diet and prostate cancer group education session facilitated by a registered dietitian. The men completed the revised validated general nutrition knowledge questionnaire (GNKQ-R) that included 3 open-ended questions at 2 time points: pre-session and then, 2 weeks post-session that included a satisfaction questionnaire.

Results: Descriptive statistics and thematic analysis were used to identify changes in learning, level of satisfaction. Significant differences occurred between mean GNKQ-R scores of the pre-session (70.19 ± 22.71) and the post-session (78.45 ± 18.46) (95% CI, $P < 0.0005$). The sessions were mostly satisfactory for meeting their needs (94% satisfied) with the highest ratings seen in level of usefulness of the information and instructor knowledge. Three themes emerged from the qualitative analysis: Importance of the diet information, integrative approach, and value of group learning.

Conclusions: Diet and prostate cancer group education sessions were effective and mostly satisfactory approaches for meeting the diet information needs in this population. The DAPPER study offers guidance from which future programs and research may be developed.

Detecting sarcopenia in cirrhotic patients assessed for liver transplantation

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Introduction: Current studies support the use of portable ultrasound (US) as a convenient, noninvasive method of assessing skeletal muscle mass (SMM) that demonstrates a high degree of accuracy, reliability, as well as test-retest reliability. Sarcopenia, defined as a loss of SMM and loss of skeletal muscle strength, has been associated with numerous poor transplantation outcomes including: increased infections; length of stay; and mortality. Research indicates a 2-fold increase in mortality in sarcopenic liver cirrhotic patients, compared to nonsarcopenic patients, independent of liver dysfunction. Currently, the sodium model for end-stage liver disease (Na-MELD) score is used to stratify patients based on their risk of death while on the liver transplantation (LTx) waiting list. However, this scoring system does not incorporate markers of nutritional status, or SMM loss.

Objective: To determine if there is a relationship between nutritional status, low SMM, and Na-MELD in cirrhotic patients awaiting LTx.

Methods: A prospective study from July 2016 to current, using quadriceps muscle layer thickness (QMLT) measurements in a cohort of adult patients assessed for liver transplantation was undertaken. A portable ultrasound machine SONOSITE S-ICU was used to capture and measure QMLT. Patients were stratified as low Na-MELD and high Na-MELD score.

Statistical Analysis: Pearson Correlation, independent *t* tests and χ^2 were used.

Summary of Results: Twenty six patients have been enrolled in the study. No significant associations were found using Pearson Correlation Coefficients. No difference was seen in QMLT ($P = 0.196$) between low compared to high Na-MELD, but there was a difference in nutrition Scores between the 2 groups ($P = 0.001$).

Conclusions: Preliminary results show that nutrition scores were impacted by Na-MELD, but no relationship was seen with QMLT, likely due to small sample size. Research is ongoing to increase sample size and patient outcomes.

Differences in quadriceps muscle layer thickness (QMLT) size by physical activity in low-risk institutionalized older adults: A cross-sectional study

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Introduction: The diagnosis of sarcopenia is based on a new definition which includes low muscle mass and strength and low physical performance or any combination of these factors. Muscle mass can be assessed by examining quadriceps muscle layer thickness (QMLT) using ultrasound technology. However, currently, minimal research has been completed examining sarcopenia in low risk institutionalized older adults.

Objective: To determine if there was an association between physical activity and QMLT size.

Methods: This cross-sectional study is 1 part of a larger research project whereby evaluation of QMLT and physical activity in 34 institutionalized elderly individuals without significant morbidity was undertaken. QMLT was measured using FUJIFILM SonoSite M turbo ultrasound machine. Physical activity was classified using the MET score into inactive (none to light activity [n = 15]) or active (light/moderate to moderate activity [n = 19]).

Statistical Analysis: Descriptive analysis and Pearson Correlation Coefficients were used to examine variables and factorial ANOVA were used to determine significance.

Results: Mean age was 83.6 ± 9.5 years and an overall group mean QMLT (cm) of 2.58 ± 0.82 cm. Not surprising, age was negatively correlated with QMLT ($r = -0.668$, active females [n = 16], QMLT: 2.6 ± 0.7 cm and inactive females [n = 8]: 2.4 ± 1.1 cm [$P = 0.3454$]). Among men, active men (n = 3), QMLT: 2.8 ± 0.6 cm while inactive men (n = 7) QMLT: 2.8 ± 0.9 cm. Both protein (g/kg) and caloric intake (kcal/kg) were not influenced by activity level ($P = 0.3191$ and $P = 0.2835$, respectively). Sex also had no effect on either protein or energy intake.

Conclusion: QMLT was not associated with physical activity, protein or caloric intake, likely due to a low sample size. Future research is ongoing.

Meeting nutritional needs with reformulated adult tube feeding formulas

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Introduction: Enteral nutrition (EN) is a mainstay in the management of individuals unable to meet nutritional requirements orally. As science and clinical practice evolves, enteral formulas must also. Four standard EN formulas were reformulated with an updated micronutrient profile supporting DRI recommendations with 2/4 having a new fibre and 2/4 a new protein blend.

Objectives: Primary objective was to assess the ability of the formulas to meet energy goals. Secondary objectives included ability to meet protein goals, symptoms of intolerance and adverse events.

Methods: Clinically stable, tube-fed adults (>18 years), currently tolerating EN and anticipated to require ≥90% of nutritional needs via EN for 21 days, were recruited.

Subjects underwent baseline observation on current EN for 3 days before initiation of study formulas: Isosource Fibre 1.2 (Formula A), Isosource Fibre 1.5 (Formula B), Isosource 1.2 (Formula C) or Isosource 1.5 (Formula D). Subject was fed 14–21 days. Energy and protein intake was recorded daily. Gastrointestinal tolerance parameters including abdominal

distension, vomiting, nausea, abdominal pain, increased irritability, and stool frequency/consistency and adverse events were monitored.
Results: Enrollment was: Formula A&B; 18 subjects each, Formula C; 13, Formula D; 16. Age ranges 22–92 years (71% male). The average daily % of caloric and protein goals achieved were 89.9% and 88.5% (Formula A), 94.0% and 98.0% (B), 87.4% and 79.8% (C) and 85.8% and 79.5% (D). In the 4 trial arms, 12 (18.5%) subjects total experienced gastrointestinal symptoms. For any formula, there were no statistically significant differences in stool frequency or pattern between baseline and study periods, nor were there differences in tolerance. There were no product-related serious adverse events reported.
Conclusions: Consumption of reformulated EN formulas resulted in intake of 85.8%–94% of prescribed calories and 79.5%–98% of prescribed protein and were shown to be well tolerated by stable tube fed patients.

Effects of plant-based diet on renal function in CKD patients

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Introduction: Low protein diets and low phosphate diets are often considered as solutions for slowing down CKD progression. Moreover, plant-based diets are superior to traditional animal protein diets for prevention and treatment of diabetic kidney disease. Nowadays, there are only short-term studies about the effects of vegetarian diet in CKD patients. Therefore, further long-term studies are required to critically examine the effects of substitution of plant protein for animal protein in the diets on the renal function of CKD patients.
Objective: Our objective was to investigate potential impact on renal progression of different dietary patterns.
Method: During 2006–2015, 914 CKD patients aged >20 had been recruited from nephrology clinics and referred to registered dietitians for 1-year low protein diet education. Since there is a big difference in numbers of vegans ($n = 22$, 10 males and 12 females; mean age: 75 ± 9.5) and omnivores ($n = 892$), only 88 omnivores (sex-, age-, CKD stage-, and primary disease-matched) were chosen for the following study. Participants' dietary intakes were assessed with diet-history interview, 3-day dietary records and a 24-hour dietary recall 4 times during 1-year interval, and collected eGFR, BMI and serum albumin.
Results: There was no significant difference between omnivores and vegan groups at baseline. After 3 months, there was significant difference between omnivores and vegan groups in eGFR decline ($P = 0.041$). However, there was no significant difference after 6 months and 1 year. The omnivores group's overall mean eGFR change was −1.60 mL/min per 1.73 m^2 ($P = 0.038$). The vegan group's overall mean eGFR change was −3.36 mL/min per 1.73 m^2 ($P = 0.036$).
Conclusion: Plant-based protein as compared with animal-based protein, may have less adverse impact on metabolic risk factors in CKD. There were no statistically significant associations of plant-based diet and renal functions. The reasons might be the plant protein quality and food additives of vegan diet in Taiwan.

COMMUNITY-BASED NUTRITIONAL CARE

Prevalence of malnutrition in the elderly population of Vancouver community home health clients

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Introduction: Malnutrition in older adults is a widespread yet under-diagnosed public health concern. Although malnutrition in hospitalized patients has been well documented, very little is known about the prevalence of malnutrition in older adults who receive home health services in the community.
Objectives: To describe the prevalence of risk of malnutrition and malnutrition in older adults who receive home health services.
Hypothesis: Based on literature review, the prevalence of malnutrition in Canadian hospitals is 45%, therefore, we hypothesize that at least 45% of home health clients are either at risk of malnutrition or malnourished.
Methods: Between April 4, 2016 and October 7, 2016, home health clinicians (nursing and allied health) conducted face-to-face interviews using the Mini Nutritional Assessment tool (MNA®) with consenting clients who were 65 years of age or older and nonpalliative, and who were newly-referred to Home Health at Evergreen Community Health Centre in Vancouver, British Columbia.
Results: Of the 611 MNAs distributed, 564 (92%) were returned and 226 Home Health clients met our inclusion criteria. 42% (95% confidence interval (CI), 36%–48%) of respondents were at risk of malnutrition (mean BMI: 24.2), 22% (95% CI, 17%–27%) were malnourished (mean BMI: 21.4), and 36% (95% CI, 30%–42%) were normal (mean BMI: 26.2). Additional MNA findings: the average age was 81, 129 (57%) were female, 87 (38%) had moderate to severe decrease in food intake, 47 (21%) had weight loss great than 3 kg during the last 3 months, 75 (33%) were bed or chair bound and/or able to get out of bed/chair but not able to go out, 128 (56%) suffered from psychological stress or acute disease in the past 3 months, and 19 (8%) had severe dementia or depression.
Conclusion: In this study, 64% of older adults who receive home health services were at risk of malnutrition or were malnourished this is considerably greater than we hypothesized ($P < 0.0001$) which highlights the need to implement routine community nutrition screening tool.

Evaluation of an adapted version of the patient assessment of chronic illness care (PACIC) and 5A's survey for use in dietetic practice: The assessment of registered dietitian care survey (ARCS)

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Introduction: Nutrition is a modifiable risk factor in the management of many chronic diseases and as such, dietitians are well poised to support patient care. However, there is no existing measure of patient experience to evaluate if nutrition service provision is aligned with evidence based chronic disease care and a nutrition counselling approach (NCA).

Objectives: The purpose of this study was to adapt and evaluate the validity, reliability, usefulness, and patient acceptability of the assessment of registered dietitian care survey (ARCS) and its subscales: the patient assessment of chronic illness care (PACIC), 5As (ask, advise, agree, assist, and arrange), and NCA.

Methods: Outpatient dietitians (n = 20) in Alberta Health Services offered the 33 item ARCS once to each successive patient (n = 1034) with a chronic disease who attended a nutrition appointment. Concurrent and construct validity were examined using Pearson correlation coefficients and principal components analysis (PCA). Reliability was examined using Pearson correlations and Cronbach's alpha. Acceptability was evaluated by survey response rate and readability. Usefulness was assessed using linear regression models and the Kruskall–Wallis test.

Results: A total of 479 survey packages were returned. The response rate was 46%, deemed acceptable compared to similar studies; and the readability score was 5.3 using the Simple Measure of Gobbledygook. Concurrent validity indices were high ($r = 0.91$ and 0.94, $P < 0.001$) between PACIC and NCA subscales respectively and lower with overall patient satisfaction ($r = 0.63$ and 0.65, $P < 0.001$). Construct validity revealed 2 factors for both PACIC and NCA subscales. There was high internal reliability for the PACIC, 5As, and NCA (Cronbach's $\alpha > 0.7$) and test-retest reliability showed consistency over time ($r = 0.70$, $P < 0.05$). The ARCS was a useful tool as statistically significant differences in scores were identified between RDs (PACIC $\chi^2 = 54.5$, df = 20, $P < 0.001$; 5As $\chi^2 = 42.3$, df = 20, $P = 0.002$; NCA subscale $\chi^2 = 51.6$, df = 20, $P < 0.001$).

Conclusions: The ARCS is an appropriate patient experience survey to help RDs understand the patients' experience of care, alignment of care with an NCA and evidenced based chronic disease care.

Hydration in head and neck cancer: Interdisciplinary perceptions of collaboration with dietitians for dehydration management in a community-based cancer centre

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Introduction: Effective interdisciplinary collaboration (IC) with dietitians for head and neck cancer (HNC) patients undergoing radiotherapy in community-based cancer-services would help support best outcomes for this vulnerable group. Dehydration within this population is a common cause of unplanned presentations and admissions (UPAs) to hospital and cancer centres. The role of the dietitian in managing a patients' hydration is poorly described, yet could be central to lowering HNC outpatient UPAs.

Objectives: To explore interdisciplinary team perceptions of collaboration with the dietitian for dehydration management of HNC outpatients.

Method: Individual in-depth, semi-structured interviews were undertaken with an interdisciplinary team involved in the care of HNC outpatients undergoing radiotherapy in 1 community-based, cancer-service in Australia. These interviews were digitally recorded, transcribed verbatim, and analysed using a grounded theory approach in Nvivo.

Results: Five dietitians, 6 radiation oncologists, 2 speech-pathologists and 2 clinical nurse consultants participated and described the importance of effective IC with dietitians for dehydration management of HNC outpatients treated in community-based cancer-services. They recognised that this was influenced at 4 levels and comprised of 8 key themes: Personal (communication, patient self-management capacity, and relationships); Professional (interdisciplinary respect, role delineation, and years of experience); Culture (collaborative goal: prevent dehydration), System and Structure (accessibility).

Conclusions: Interdisciplinary HNC teams recognise the important role of the dietitian in identifying dehydration, and the need to collaboratively prioritise adequate hydration within this vulnerable group to prevent related UPAs. These exploratory findings provide insight into defining primary outcomes that dietitians need to focus on for HNC outpatients. Future research should investigate strategies for monitoring and maintaining hydration status of HNC patients undergoing radiotherapy in community-based cancer-services.

DETERMINANTS OF FOOD CHOICE, DIETARY INTAKE

Freezer meal frenzy: A workplace wellness initiative

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Purpose: Freezer Meal Frenzy is a workplace wellness initiative intended to promote cooking and eating healthy meals at home, expose employees to new foods, increase food preparation skills and to answer the age old question "what's for dinner?"

Process or Summary of Content: The Freezer Meal Frenzy is a night where interested employees come together to prepare meals to fill their freezer. The meals can then be cooked later in the slow cooker, oven or stove. Each session has 6–10 participants, each person going home with 10 meals that feed a family of 6, all for approximately $140.
Systematic Approach Used: After determining this would be a viable option for staff, facilitators reviewed resources including books, websites, and blogs. From those resources, they chose recipes, adjusted them and compiled grocery lists. On the day of the event, facilitators do the grocery shopping and prepare the space that will be used for the event. After each session, facilitators document results such as grocery bills, calculated price per meal and lessons learned to improve efficiency for future sessions. Evaluation is also done with participants, seeing which meals they liked or disliked and the benefits they experience from the program. Participation has steadily increased which has prompted changes to make the program accessible to more participants.
Recommendations/Conclusions: The program has been very successful and has continued to grow for the past 3 years. The event really helps to build skill for participants and often introduces them to new foods. Purchasing ingredients in bulk helps to keep the meals reasonably priced. An unanticipated benefit is team building for staff—many participants have appreciated getting to know their co-workers in a different capacity when they are preparing meals together. With careful planning, this program could be replicated in a variety of different workplaces, and with different client groups.

Dietitians' identification of top barriers to healthy food environments

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Introduction: The food environment can support people to make healthier food choices, or it can be a barrier to healthy eating. Dietitians play an important role in influencing policies that support healthier food environments. Dietitians of Canada is committed to providing decision-makers with evidence-informed recommendations to address barriers to healthy food environments.
Objective: To identify Dietitians of Canada member priorities for advocacy action to improve food environments.
Methods: An online survey listing 11 barriers to healthy eating environments, based on published frameworks and current DC member advocacy, was developed and pre-tested with 10 dietitians. It was announced to all DC members and available from December 1 to 16, 2016; with 1 reminder email. The survey asked respondents to choose 3 of the listed barriers as the top priorities for action, identify other barriers if not included in survey choices, and identify supports needed for advocacy.
Results: 484 respondents completed all questions. Almost all respondents (99%) indicated that it was important for DC to advocate for healthier food environments. The top 6 barriers identified were insufficient food skills to support healthy eating (42% of respondents), pricing of healthier food options relative to less healthy options (40%), and not enough income to purchase healthy foods (33%), availability of healthy foods where children and youth learn and play (33%), marketing of foods and beverages (29%), availability of foods with too much fat, sugar, or sodium (20%). Diverse supports are needed including evidence summaries, infographics or other visuals, position papers, and key messages in brief formats. Respondents were generally representative of overall DC membership in area of practice, location, and years of practice as a dietitian.
Conclusions: Dietitians of Canada members' priorities for action on healthier food environments include food skills, relative pricing, and food security; foods available to children and youth, marketing, and availability of foods high in sugar/salt/fat. Supports for individual action are varied and must be evidence-based.

Are therapeutic or modified texture diets associated with food intake and nutritional status of residents in long-term care homes?: The Making the Most of Mealtimes (M3) study

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Introduction: It has been suggested that restricting diets in long term care (LTC) reduces older adults' food intake and may lead to iatrogenic malnutrition.
Objective: To examine if nutritional status, and energy and protein intake of residents is associated with prescription of a modified texture food or therapeutic diet.
Methods: The Making the Most of Mealtimes (M3) prevalence study examined determinants of food intake of 639 residents in 32 diverse LTC homes in 4 Canadian provinces (Alberta, Manitoba, Ontario, and New Brunswick). Food and beverage intake was collected for a 3-day period using weighed and estimated food records for meals and snacks. Malnutrition risk was determined using the mini-nutritional assessment–SF (MNA-SF) and the patient-generated-subjective global assessment (PG-SGA). Information on therapeutic diets and modified texture foods were also collected from health records.
Results: The proportion of residents on modified texture foods using the international dysphagia diet standardisation initiative (IDDSI) categories was: Regular (53%); Soft (14.3%); Minced/Moist (21.8%); Pureed (10.9%). Less than a quarter (22.8%, 137/630; 9 residents removed as <6 meals recorded) were prescribed a therapeutic diet: Diabetic

(80.3%); High Protein (37.2%); High Energy (35.0%); and No Added Salt (17.5%). Energy intake for those on a Minced/Moist diet (1486.5 ± 329.3 kcal) was significantly lower as compared to regular texture (1567.1 ± 269.8; $P < 0.05$). Those on texture modified diets were more likely to be malnourished or at risk of malnutrition ($P < 0.05$). No significant differences were found between nutritional status and energy/protein intake of residents on any therapeutic diets as compared to those not on a therapeutic diet, although individual diet differences were seen in anticipated directions.
Conclusions: Modified texture foods are more likely to lead to poor food intake and malnutrition than therapeutic diets. Therapeutic diets do not seem to negatively influence food intake or nutritional status.
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DIETETIC PRACTICE AND EDUCATION

Nutrition care course redesign in UBC's integrated dietetics program

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Purpose: To redesign 2 nutrition care courses to enhance student satisfaction with: (*i*) teaching and learning, and (*ii*) preparation for practicum.
Process: This project arose from extensive stakeholder feedback about issues students can face in clinical practicum settings with foundational knowledge recall, clinical reasoning, and confidence. Student feedback also revealed a need for nutrition care course redesign to address teaching and learning issues. A team-led redesign process was informed by a needs assessment, including a review of teaching and learning literature, scan of approaches used by others, and stakeholder consultation. Resultant priorities were to enhance course organization, avoid information overload, utilize dietitians as guest facilitators, enhance student assessment and feedback strategies, and expand opportunities for active learning. A survey of students following implementation of the first revised course indicated improved satisfaction from baseline in key areas related to teaching and learning, including: organization (21%–86%) and volume (29%–75%) of lecture content, and effectiveness of lecture content for learning (24%–96%). Adequacy of feedback on class assignments was identified as an area for further improvement. Survey findings were used to inform plans for the second course, which is now in progress. Evaluation of students' perceived preparation for practicum placements is beyond the timeline of the project, but will be assessed into the future using established program surveys.
Systematic Approach Used: The project utilized an evidence-informed, collaborative approach to course redesign.
Recommendations/Conclusions: Student feedback confirms that these systematic course redesign efforts have had a positive impact on the student course experience. Next steps are to assess broader outcomes over time, and develop an ongoing stakeholder advisory mechanism to ensure that the courses are refined on an ongoing basis to meet stakeholder needs.
Funding: We acknowledge the funding support of the UBC Teaching and Learning Enhancement Fund.

A standardized process for managing NPO orders

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Purpose: To address the process of ordering and managing NPO orders on hospital units across the health authority.
Process: At our health authority, varying practices for ordering and implementing NPO status were resulting in miscommunication of NPO status and diet orders to food services. With food services not being notified of NPO status, meal trays were sent leading to the cancellation of procedures and surgeries. We undertook stakeholder engagement to determine the factors contributing to this problem. Stakeholder engagement revealed that nursing staff were not communicating NPO orders to food services for fear of food not being available if NPO orders were cancelled late in the day. To address this, we worked with food services and nursing to pilot the provision of a set number of bagged meals on the pilot units. The bagged meals provided a source of food should an NPO order be cancelled. During the pilot, we tracked NPO orders and bag meal usage. Engagement also revealed that nurses were not aware of meal service processes, including cut off times for diet changes and the availability of late meal trays. To address this knowledge gap, food services prepared a communication to nursing staff on meal service processes, as part of the pilot. We also developed a clinical practice document (CPD) to outline the responsibilities of healthcare staff in managing and communicating NPO orders. We also included a standard definition for NPO. Upon completion of the pilot project, the CPD was finalized and the bagged meal program was modified to meet actual need.
Systematic Approach Used: Stakeholder engagement and pilot project were used to inform the CPD.
Recommendations/Conclusions: The development of a standard definition for NPO and documenting the process to order and manage NPO orders within a CPD will allow for consistent practice and improved patient care throughout the health authority.

Motivation over the phone (MOPing): An innovative approach by EatRight Ontario to promote healthy eating behaviour change

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Purpose: To highlight how behaviour change techniques have been implemented in a Registered Dietitian contact centre

with the intention to better support a caller's readiness to change and empower the caller to take action.
Summary of Content: EatRight Ontario (ERO), funded by the Ministry of Health and Long Term Care and managed by Dietitians of Canada, provides free, evidence based nutrition (PEN®) and healthy eating advice from Dietitians through phone, email, and website to benefit Ontarians. ERO uses behaviour change models such as motivational interviewing, cognitive behaviour therapy, and trans-theoretical model to engage and empower the caller toward changes in eating behaviours. While primarily used in one-on-one counselling the literature also supports the use of these techniques in tele-dietetics. Studies show that these approaches combined with internet-based interventions, have been an important adjunct to care in obesity management and food choice behaviours.
Systematic Approach Used: With supportive evidence, stakeholder input, and client feedback, ERO developed a unique approach for using motivational and cognitive behaviour techniques in a tele-dietetic environment called MOPing (motivation over the phone). Staff training and support includes tailored workshops, a toolbox of MOP prompts, a library of MOP calls, email tips and self-reflection MOP call discussions, and data collection.
Conclusions: Data analysis shows that about 83% of ERO calls include MOP techniques such as open-ended questions, active listening, agenda setting, goal setting, and call to action. About 32% of calls on weight management, digestive health, heart health, and healthy eating result in goals setting. About 82% of these callers indicate a very or somewhat high level of confidence and conviction for the goal they set with the dietitian. ERO has enhanced dietetic practice by increasing access to a dietitian and MOP offers an innovative approach to enhance the effectiveness of the service provided.

Becoming and being a male dietitian in a female dominated dietetics profession

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Introduction: Despite serving a sex diverse population, the number of males in Canadian dietetic education programs remains low as do the studies examining this phenomenon. Few studies have explored the male experience of becoming and being a dietitian within this feminized profession.
Objectives: The qualitative research aims to provide a description of the experience and meanings of becoming and being a male dietitian. The research seeks to illuminate male experiences in the education and professional settings, and to shed light on how males come to understand those experiences.
Method: Six male dietitians were purposively recruited to participate in individual, semi-structured, 2 stage interviews which were transcribed and thematically analyzed following an interpretive phenomenological approach.
Results: Four superordinate themes that were persistent throughout both their didactic and career experiences emerged: (*i*) feelings of being different, (*ii*) adapting, (*iii*) finding a professional identity, and (*iv*) passion as the driver of success. Sense-making of experiences was individual, however all participants struggled as they attempted to professionally acculturate in response to real and perceived challenges they encountered because of their minority.
Conclusion: Being male in dietetics requires effort to adapt to both education and career environments. The research provides insight into how males experience and make sense of becoming and being dietitians. While males adapt, a question emerges, is this adaptation positive or are males transforming their male identities to fit existing cultural norms, thus constraining their unique professional identities and their potential contributions to the field? Any advantages associated with balancing the profession's sex composition may not be experienced if male practitioners conform to the feminized standards of the profession.

FOOD SECURITY

Shifting thinking about income-related food insecurity: Health students and practitioners reflections on "The Hand You Are Dealt"

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Purpose: Since 2002, participatory food costing, and related research on the lived experiences of food insecurity in Nova Scotia has demonstrated the need to shift policy change efforts from increasing minimum wage and income assistance towards more comprehensive policy approaches that ensure a sustainable liveable income to meet basic needs, including a nutritious diet, for all. Divergent worldviews on the causes of, and solutions to, food insecurity, however, pose significant barriers to policy changes needed to address the root causes of food insecurity.
Content: The Hand You are Dealt board game (HYD) was developed by FoodARC partners in 2015 to build awareness of structural barriers to food security, and support shifts in thinking about the approaches needed to address it, and implications for population health. This presentation will provide an overview of the HYD and share experiences with facilitating and playing the game.
Systematic Approach: A series of interactive sessions (n = 10) were held with health student, practitioner, and mixed audiences between November 2015 and May 2017. Audiences played the HYD and participated in facilitated discussions on using the tool to support knowledge sharing on income-related food insecurity. Data were analyzed using content analysis, and partners were engaged in a focus group to reflect on their experiences facilitating the game.

Conclusions and Recommendations: The HYD was effective in capturing health students' and practitioners' attention, creating empathy, and transforming perceptions and assumptions about people facing food insecurity. Participants felt it could be an important "sensitivity training" tool for health students, as well as community-based health practitioners. Challenges around the effectiveness and accessibility of the game were identified by participants but a variety of approaches including "train the trainer" were suggested to address the challenges. The HYD offers potential to shift thinking towards longer-term policy solutions for food insecurity, but the accessibility of the tool will need to be addressed.

NUTRITION AND HEALTH EDUCATION

Development of Kick Start Nutrition: An adult food literacy program run by non-nutrition professionals

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Purpose: Synthesized literature has identified that nutrition education can be successfully run by non-nutrition professionals, contingent on the provision of adequate supports. The aim of this proposal is to outline the development of Kick Start Nutrition (KSN), a 12-week food literacy program for adults that is supported by a Registered Dietitian (RD), but designed to be run by fitness coaches employed at a community organization.

Process: Niagara Region Public Health (NRPH) supported a community organization with the development of KSN through curriculum provision and staff training. The NRPH RD used the Evidence-Informed Public Health (EIPH) process model developed by the National Collaborating Centre for Methods and Tools (NCCMT) to structure KSN's planning process.

Systematic Approach Used: By using the 6S pyramid, synthesized literature was leveraged to ensure program design and content was evidence-informed. The NICE guideline, Behaviour change: individual approaches (2014), was integral to the development of the program design, providing recommendations for steps in the planning process. The curriculum is grounded in a food literacy framework, since increased food literacy has shown to have a marked positive impact on diet quality. A logic model outlined inputs, outputs and outcomes, while the evaluation framework outlined evaluation questions and indicators to be measured during program implementation. Measures taken to increase program sustainability include a focus on building community capacity along with a formative evaluation prior to widespread community implementation.

Recommendations: Moving the dietitian from direct provider of nutrition education to supporting program delivery could be a more effective use of dietetic capacity, particularly for primary prevention programs.

A pilot program to determine the feasibility of organizing a walking/healthy lifestyle program for seniors in a rural community

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Purpose: The objective of this pilot program was to determine the feasibility of offering patients of a Family Health Team the opportunity to participate in a free walking/healthy lifestyle program in a rural area.

Summary of Content: Family Health Teams are encouraging patients to follow healthy lifestyles, including participating in physical activity, but patients are faced with barriers such as distance and cost of programs. In rural areas, these barriers become more pronounced. Our program was designed to allow new participants to join at any time of the year. Ten to 12 participants attended class regularly. After the program, these participants reported having more energy, able to maintain weight and having favorable blood lab results. Participants also reported having looked into other fitness programs on other days. Reasons for continued attendance ranged from medical health problems necessitating continued lifestyle changes, to staying fit, and meeting friends. Participants noted that comradeship kept them interested in attending the program.

Systematic Approach Used: Our program was advertised in the clinic and local newspaper. Staff from the YMCA, Nurse Practitioner, and Dietitian greeted participants Wednesdays during lunch hour on the walking track at the Clinton arena. The YMCA staff led the exercises at the many workout stations for the first 15 minutes. Participants then walked laps while music played. The program ended with the RD and NP presenting various nutrition and lifestyle information to further encourage healthy living while a healthy snack was served.

Recommendations/Conclusions: Creating a no cost to the participant fitness program, that includes a healthy living education component, is effective in reducing barriers to healthy lifestyle choices, in a rural area. While 1 day per week may not lead to substantial changes in one's health, it gives participants the initiative and direction to pursue more physical activity per week and attain healthy lifestyle goals.

Knowledge, attitudes, and perceptions of carbohydrates among nutrition undergraduates in Canada

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Introduction: Dietitians play an important role in improving Canadians' health through communication of evidence-based

nutrition information. Students gain knowledge from nutrition courses and develop critical thinking skills required for future careers as dietitians. However, students may also be influenced by information online and in mainstream and social media that contain competing messages not always based on high-quality science.

Objectives: This study aimed to assess knowledge and attitudes/perceptions of carbohydrates among students enrolled in undergraduate nutrition courses in Canada.

Methods: Surveys with 32 questions were distributed in nutrition classes to students at different stages of their education at 7 Canadian universities in Winter 2016. Responses to individual questions were analyzed using SPSS.

Results: A total of 784 students (58% enrolled in a nutrition degree program) participated between January and April 2016. When asked to list 3 sources where they obtain nutrition-related information, 68% of respondents included at least 1 internet source (e.g., Wikipedia, Google, and YouTube); only 10% listed 3 credible sources (e.g., scientific journals, dietitians, and government). A modest majority of students knew the correct amount of Calories per gram for both starch and sugars (56% and 58%, respectively); the proportions who knew the equivalent answers for fat and protein were higher, both at 70%. Almost 71% of students correctly identified carbohydrates as a preferred source of efficient energy over protein or fat for intensive physical activity. Perceptions of sugars-related health topics were generally negative, many reflecting information and opinions communicated online, in mass and social media sources.

Conclusions: Knowledge gaps were identified among undergraduates enrolled in nutrition courses. These knowledge gaps highlight the importance of critical thinking when learning basic food chemistry and metabolism of carbohydrate, and warrant greater emphasis on addressing knowledge gaps, improving knowledge retention and ensuring nutrition curricula are based on current high-quality evidence. The importance of accessing nutrition information from credible sources needs to be reinforced throughout the degree programs.

Infant feeding stories and wisdom from First Nations communities: An experience in developing a resource inclusive of the intended audience

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Purpose: Introduction of solid food to infants has potential effects on lifelong health. Many resources prescribing best practices are available but it is observed they are often not followed in Saskatchewan First Nations. We aimed to provide Saskatchewan First Nation communities with a culturally appropriate resource to promote best practices for infant feeding using storytelling as a tool to promote values, self-esteem, and benefits associated with positive baby feeding practices.

Process/Summary of Content: Stories were gathered from 5 Saskatchewan First Nations and 2 individual elder visits. Stories were chosen to represent prevalent themes to honor women's experiences and to support best practice guidelines. The Canada Prenatal Nutrition Program (CPNP) Saskatchewan Working Group was provided a draft to evaluate. Starting Your Baby on a Healthy Path was printed and distributed in 2015.

Systematic Approach Used: Developing the resource was a qualitative process. Focus groups were arranged to have input from northern, central, and southern communities. A rudimentary framework was developed with best practices in mind. Open ended questions were asked with limited response from facilitators. Sessions were recorded to ensure accurate quotes. As data was reviewed common themes were identified. The framework was expanded to be inclusive of the themes. To complete the resource, information was added to ensure best practices were highlighted.

Recommendation/Conclusions: There is great value in gathering and sharing the knowledge and wisdom from Indigenous communities. Feedback obtained following distribution indicates the resource is beneficial as a teaching aid and in facilitating discussion. Having more First Nations based resources that weave together real life experiences and best practice guidelines could provide influential education. Such resources have potential to strengthen the dialogue between women and health professionals when it comes to challenges in implementing best practices.

NUTRITIONAL ASSESSMENT AND THERAPY

EMR-ization of standardized malnutrition screening and assessment in primary care across Ontario

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Purpose: Despite the fact that 34% Canadians over 65 years are at nutritional risk and 47% of seniors are malnourished on hospital admission, malnutrition is often overlooked. The Dietitians of Canada Ontario Primary Healthcare Action Group (PHCAG) has made malnutrition screening for seniors in primary care settings a priority initiative and has been advocating for standardized malnutrition screening and assessment, a collaborative interprofessional team approach to manage malnutrition and electronic medical record (EMR) customized charting templates to collect outcome data to assess quality of care and support upcoming provincial quality improvement projects.

Process: Gaps were identified in practice with respect to malnutrition screening and assessment (e.g., low referral rate, variability in assessment approach, and lack of standardized data collection). EMR customized charting templates (i.e., encounter assistants) are designed to guide clinical workflow in identifying patient populations, using appropriate

screening instruments and processes, and standardizing data collection to facilitate on-going monitoring/evaluation of service quality and effectiveness.

Systematic Approach: Malnutrition encounter assistants were created to include 3 validated instruments (e.g., CNST, MNA-SF, and SCREEN II-AB) appropriate for screening vulnerable seniors (e.g., recently discharged from hospital and with cognitive issues). Positive screenings are referred to dietitians for further assessment including subjective global assessment to determine level of malnutrition and appropriate intervention. Nutrition diagnosis, weight status, Mediterranean diet score, hand-grip strength, biochemical tests, and internal/external referrals are recorded in the encounter assistants.

Conclusions: New encounter assistants for malnutrition have embedded validated screening/assessment instruments into EMR and simplified the process of data collection. More than 150 dietitians and other providers have been trained at PHCAG RD Research Day, AFHTO conference/webinars and via AFHTO IHP community of practice to screen seniors at nutritional risk in a standardized manner with a systematic approach to outcome measurement. Recommended outcome indicators have been shared with Quality Improvement and Decision Support Specialist (QIDSS) network to facilitate adoption and spread in provincial quality improvement projects.

Nutritional supplements: How much?

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Purpose: To report on a new electronic documentation initiative that has made a significant impact on nutrition assessments and interventions.

Summary of Content: Nutrition care in the elderly population is extremely important when considering overall health. At Sunnybrook Health Sciences Centre, Veterans Centre, Nurses, Registered Dietitians (RDs), and Food Service Supervisors (FSS) collaborate in an effort to maximize nutritional care. Residents are assessed for nutritional risk to provide guidance for individual nutritional interventions. Nutritional supplements and snacks are a type of intervention prescribed by an RD. In an effort to increase awareness of this type of intervention, improve communication between disciplines and increase resident nutritional intake, RDs, FSS, Nursing, and the Electronic Documentation Team (EDT) collaborated to improve the documentation and communication of the delivery and consumption of prescribed nutritional supplements and snacks.

Systematic Approach: An interprofessional team that included: RDs, FSS, Nursing, and the EDT, met to discuss and create an expanded electronic program designed to capture intake of specific nutritional supplements and snacks prescribed by the RD. Nursing staff who would be documenting in this new program, were invited to trial the suggested changes and provide feedback to the team. Several months prior to the launch date, Nursing staff, Advance Practice Nurses, and Patient Care Managers were provided information and education regarding the new documentation. On February 1, 2016 the Point of Care documentation system was rolled out to include new configurations to record consumption of prescribed nutritional supplements and prescribed snacks.

Recommendations/Conclusions: The new documentation on intake of prescribed nutritional supplements and prescribed snacks has enhanced nutrition assessments and interventions. It has also provided more accurate information to make timely adjustments to resident's nutrition care plans and has strengthened communication between nursing and nutrition staff. This initiative has provided excellent opportunities for interprofessional communication and collaboration with an overall impact on improving patient-centred nutritional care.

Dietitian insights on a practice tool to assess taste and smell alterations in hemodialysis patients

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Introduction: Individuals with chronic kidney disease (CKD) requiring hemodialysis (HD) are at risk of malnutrition. Many HD patients also report taste and smell alterations (TSAs) which could negatively impact dietary intake and overall health. Currently no tool exists for dietitians (RDs) to assess TSAs in CKD.

Objective: To adapt the "Taste and Smell Survey" for cancer patients for use in HD patients.

Methods: Participants were RDs in Alberta with current or previous experience in HD, recruited in partnership with Alberta Health Services. The original Cancer survey is a 14 question scored tool used to determine patient-perceived severity of TSAs. An online questionnaire was developed to ask RDs about (*i*) the presence and severity of TSAs observed in HD patients, (*ii*) if questions from each section of the Cancer survey would be useful in assessment of TSAs in HD patients, and (*iii*) for other comments regarding an assessment tool.

Results: Seventeen RDs completed the online questionnaire. Among respondents, 59% identified that TSAs were present "Very Often" in HD patients and 41% indicated "Sometimes". The following proportion of respondents chose "Strongly Agree" or "Agree" that each respective section of the Cancer survey would be useful in their HD practice: Screening questions for TSA (94%), persistent taste in mouth (94%), if drugs interfere with taste or smell (53%), changes to basic tastes and smell since starting treatment (65%), significance of TSAs in the last 3 months (100%), and how TSAs affect quality of life (100%).

Conclusions: This online questionnaire confirmed that RDs in Alberta identify TSAs in HD patients and that a tool would be useful. These results will inform focus group discussions with RDs on TSA in HD. The online questionnaire and planned focus group results will guide adaptation of the Cancer survey into a practice tool for use with HD patients.

NUTRITION ATTITUDES

Nutritional attitudes and perceptions amongst a sample of Canadian adults

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Introduction: Understanding Canadians' attitudes and perceptions towards food and nutrition is key to help them improve their dietary choices.

Objectives: To qualitatively explore attitudes and perceptions of Canadian adults with respect to diet and food choices.

Methods: The exploratory study was conducted in July 2016 by the research firm Ipsos. Participants were 37 women and 25 men aged 18–65 from Halifax, Montreal, Toronto, Calgary, and Vancouver, selected randomly via a panel of >100 000 individuals. An asynchronous online discussion forum was held over 3 days and 50 open-ended questions regarding food choices were asked. Data was analyzed by a senior researcher according to criteria established by the dietitians of Dairy Farmers of Canada.

Results: Participants recognized the importance of a healthy diet. However, they reported having difficulty choosing nutritious foods and often sacrificing food quality due to lack of time and money. Eating for taste and pleasure was sometimes more important than nutritional quality. Locally grown products and traditional foods were aspects considered by some participants. Some also mentioned their concern for the way animals are raised. The majority of participants mentioned a desire to include more fruits and vegetables, legumes, fibre, and fish in their diet, and less red meat, sugar, fat, and processed foods. Most participants perceived that they consume sufficient milk products, while some reported preferring to decrease their intake. The reasons for increasing or decreasing the consumption of certain foods was mainly based on how the food makes them feel rather than nutrition knowledge.

Conclusions: Several factors appear to be important with respect to diet and food choices including taste, healthiness, and quality. Aspects such as time and cost might be barriers to healthy choices. Additional research should validate and quantify these attitudes and perceptions, to shape nutrition communications that will successfully improve Canadian's dietary choices.

NUTRITION STRATEGY DEVELOPMENT

Development of a nutrition strategy for the Canadian Armed Forces to enhance operational effectiveness, human performance, and long term health based on scientific evidence

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Process: A comprehensive literature review of military nutrition research was completed to determine gaps with the current feeding program. This review showed nutrition has been associated with challenges to military personnel readiness, long term health, and issues with operational effectiveness. It identified that energy deficits occur on training and operations. Factors were identified that affect intake by military personnel including nutrition knowledge. The literature review enforced the need for a nutrition strategy to support CAF feeding programs and meet nutritional requirements of the military population.

Project Summary: Implementation of the strategy continues. Changes were implemented to improve the nutritional content of the shelf stable combat rations. A nutrition education program was developed and will be implemented as part of the mandatory training program for all recruits, leadership training programs, and CAF members tasked for deployments. A National Standardized Cycle menu has been implemented that includes healthier choices at all meals with promotional material to encourage intake of these choices. Standards for feeding have been revised to address the increased nutritional requirements of CAF personnel working in austere conditions.

Systematic Approach Used: The strategy identified 5 focus areas: optimal nutrient content; intake and delivery; hydration; education; and strategy sustainment. Dependency linkages, time lines, and evaluation of outcomes were identified.

Recommendations/Conclusions: Briefing senior leadership in the CAF on the strategy and the importance of nutrition to soldier readiness and performance has increased the awareness of the importance of nutrition in the success of military operations and the long term health of CAF personnel. There is a requirement for further research in military nutrition to fully implement the strategy.

PATIENT SERVICES

Offering unique public services at the Human Nutrition Research Unit: A pilot outreach project

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Purpose: The Human Nutrition Research Unit (HNRU) at the University of Alberta is a state of the art facility supporting leading health research in nutrition. A full complement of

energy metabolism, body composition, dietary assessment, and intervention activities are performed on site for research purposes. Excess capacity that would allow use of these services outside of research was identified by HNRU staff. This information in combination with the University of Alberta's goal of "uplifting the whole people" supported exploration of offering select services to the public.

Process: A business plan was developed that included the value proposition to clients, proposed use of equipment, an environmental scan of other facilities offering similar tests, a marketing plan including pricing and promotion, a staffing plan, and financial projections. A preliminary market evaluation was conducted with the general public, Registered Dietitians, and personal trainers. Key services of interest identified were: (*i*) resting metabolic rate (RMR) measured by a whole body calorimetry unit; and (*ii*) body composition (BC) measured by air displacement plethysmography (BodPod®). Special considerations included risk management, liability insurance, and appropriate methods of communicating client results with health care providers. The HNRU also sought advice and expertise from an existing Nutrition and Exercise Testing facility (NExT Lab) at Ryerson University.

Systematic Approach Used: A pilot project ran from October to December 2016 in partnership with a private-practice dietitian clinic. During that time 6 RMR and 4 BC tests were completed. An anonymous electronic exit survey captured client demographics and satisfaction with their experience. Of the 7 surveys completed, 100% of respondents indicated they were "Very Satisfied" with the service.

Recommendations/Conclusions: RMR and BC testing provide individuals with unique information that can be used to support lifestyle change and improve health. However, guidance and support from a Registered Dietitian is essential to utilize this information appropriately.

PROFESSIONAL DEVELOPMENT

An exploration of dietetic students' perceptions of their involvement in a noncourse-based service learning opportunity

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Introduction: Service learning (SL) provides an opportunity to benefit both the community and undergraduate students. Common benefits reported by students involved in course-based SL include both skill and personal development; however, it is unknown whether the same benefits can be achieved in a noncourse-based SL program within an academic setting.

Objectives: To explore undergraduate dietetic students' perceptions on their involvement in Nutrition Ignition! (NI!), an extra-curricular research club that supports a community-based research program for school-aged children and their families. Student NI! members run the program by getting involved in various activities. NI! aims to improve children's knowledge and awareness of nutrition and healthy living.

Methods: A brief demographic study questionnaire and focus group interviews (20–45 minutes duration) were conducted on a convenience sample of NI! members in March 2016 (n = 33). Members were eligible to participate if they had contributed at least 10 hours of volunteer time to the club; were over the age of 18 years; and, were enrolled in the Nutrition and Dietetics program at the university. Inductive content analysis was employed by the researchers on the data as per the immersion-crystallization method and major themes were identified.

Results: Participants reported getting involved in the NI! club to: improve professional skills; expand learning; help their community and expand social networks. Participants felt that their involvement with NI! improved their communication skills, provided a better understanding of "real world" community-based program implementation and research, broadened their world view, and enhanced preparation for their internship applications and careers as dietitians.

Conclusions: A noncourse-based SL program offered in an academic setting provides similar benefits to dietetic students as those observed with course-based opportunities and should be considered an effective way by which students can get meaningful experiences to deepen the breadth and depth of their understanding of the dietetic profession.

VULNERABLE GROUPS AND THEIR NUTRITIONAL NEEDS

Toward trans-friendly and respectful dietetic practice

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Purpose: Our purpose is to develop a respectful approach to nutrition counselling and assessment with a trans-inclusive focus that builds on existing methods that include synthesis of anthropometric, biochemical, clinical, dietary, eating experiences and environments, meanings of food, and relationships with family and friends through food (ABCDEF) parameters.

Process: As a family (RM—trans masculine; CM—parent and dietitian), we have had conversations about moving "beyond the gender binary" (male/female) in nutrition assessment and counselling. Further, we have been following the Community of Practice discussions of the Canadian Professional Association for Transgender Health on making one's practice in health and human services trans-friendly.

Systematic Approach Used: Based on approaches to teaching and practicing nutrition assessment using ABCDEF parameters, many questions arise. These include determining anthropometric parameters to assess energy, protein, and other nutrients, how the Health At Every Size philosophy aligns with trans-appropriate anthropometric assessment, how hormone therapy affects appetite and body composition,

how transitioning can affect body image, how lack of trans-friendly public restrooms can result in fasting and lack of fluid consumption when away from home, and adjusting to gendered social norms for eating behaviour.

Implications and Conclusion: With so many possibilities for how approaches to dietetic practice may develop, we advocate that any exploration of trans-friendly nutrition assessment and counselling practice be collaborative between the trans community and nutrition professionals (that is, "Nothing about us without us"). We invite colleagues interested in these explorations to join us toward making dietetics education, research, and practice trans-friendly and inclusive (Contact: cmorley@acadiau.ca).

WELLNESS AND PUBLIC HEALTH

Vancouver Food Asset Map helps users find food easily

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Purpose: To provide a tool to share food assets that is current, easy to use and easily updated that will help to build community capacity and support for community members dealing with food security.

Process: Vancouver Public Health Dietitians applied technology and a collective impact approach to create a Vancouver Food Asset Map using the My Map tool from Google. The project started in 2014 by gathering Vancouver community partners interested in food security, collectively establishing goals, and deciding on assets that would be included and the definitions for each of the assets. The project is continuing to evolve based on community feedback. Results are communicated electronically and through in person meetings.

Systematic Approach Used: University of BC students, community members, and partners are helping to update, revise, communicate, evaluate, and continuously improve the map. The Map includes almost 800 food assets and over 300 schools and community organizations. Over 200 community members have provided feedback to help improve the Map. Evaluation results show that 64% did not know how to find food assets in their community before using the Map, 86% found it easy to use and 78% said they would use it in the future. Since the launch of the Map at the end of September 2016, there have been over 10 600 views. Vancouver Public Health Dietitians are sharing their knowledge and resources to help other communities in British Columbia to create similar maps. As a result, North and West Vancouver, Bowen Island, Squamish, and the Sunshine Coast are starting to create similar food asset maps. More information can be found at http://www.vch.ca/your-health/health-topics/food-asset-map-vancouver/.

Recommendations: The My Map tool from Google provides an easy way to share current information on a variety of topics with communities. The Vancouver Food Asset Map has made it easier to utilize community food assets strategically by using evaluation results for discussions with community partners.

Weight status and food security of Latin-American immigrant mothers and their school-aged children living in Ottawa versus Mexican mothers and their school-aged children

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Introduction: Migration is a process that impacts weight status and food security (FS) of immigrants. Lack of FS has been linked with increased risk of overweight/obesity.

Objective: To compare the weight status and FS level between Latin-American immigrant mothers and their school-aged children living in Ottawa and Mexican mothers and their children in Hidalgo (Mexico).

Methods: A transversal descriptive and comparative study was carried out in a convenience sample of 101 mother-child dyads. We recruited 49 Mexican mothers in Hidalgo and 52 Latin-American immigrant mothers in Ottawa, having a child aged 6–12 years old. Weight and height of children and mothers were measured. Their body mass index (BMI) was calculated. Children's BMI-for-age and sex was compared to World Health Organization (WHO) growth references. Overweight was defined as percentile >85th, obesity >95th. For adults, WHO BMI cut-offs were used. FS was assessed in both countries with the Household Food Security Survey Module Adult and Child Scales. FS categories were food secure or marginally, moderately, or severely food insecure.

Results: Children living in Mexico had a higher prevalence of overweight and obesity (41%) compared to Latin-American children living in Canada (33%), without statistically significant difference ($P = 0.33$). Mexican mothers had a significantly higher prevalence of overweight and obesity than Latin-American immigrant mothers (77.5% vs 63.4%, $P = 0.005$). Household Food Security was significantly better in immigrant dyads than in Mexican dyads: 84.6% versus 40.8% ($P < 0.001$).

Conclusion: Weight status and FS level of Latin-American immigrant mothers and their children were better in Canada than in Mexico. Still, both were worse than the Canadian-born population; prevalence of overweight and obesity for women 53.1%, 31.4% for children and FS rate of 87.9%. The high prevalence of overweight and obesity found may be partly explained by food insecurity.

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