

# CANADIAN FOUNDATION FOR DIETETIC RESEARCH

## CFDR Research Showcase, Early Bird Abstracts

Due to the cancellation of the Dietitians of Canada (DC) conference for 2020 because of the COVID-19 pandemic, the 2020 Research Showcase was not able to be held as planned in Saskatoon in June 2020.

Ten of the Early Bird abstracts were presented as Lightning Rounds during the virtual DC conference that was held in June and July, 2020. All 25 Early Bird abstracts are published in this issue of the Canadian Journal of Dietetic Practice and Research and are also posted on the [CFDR website](#). These abstracts represent a wide variety of practice-based nutrition research projects in Canada.

The Early Bird abstract research event would not be possible without the commitment and dedication of many people. On behalf of DC and CFDR, we extend a special thank you to members of our abstract review committee: Susan Campisi (University of Toronto); Elaine Cawadias (Retired); Pauline Darling (University of Ottawa); Andrea Glenn (St. Francis Xavier University); Mahsa Jessri (University of British Columbia); Jessica Lieffers (University of Saskatchewan); Shelley Vanderhout (University of Toronto).

Thanks also to the moderators for the Lightning Round presentations in the virtual DC conference. Finally, thanks also to the DC Conference team for their support with the Lightning Round presentations over the course of the DC virtual conference.

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# Dietetic Practice and Education

## **A national and provincial update on Nutrition Care Process (NCP) implementation in Canada**

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**Introduction:** The Nutrition Care Process (NCP) is a standardized approach for dietetic practice which has an accompanying terminology (NCPT) for documentation. NCP/NCPT implementation has been occurring in Canada for more than a decade.

**Objectives:** To obtain and analyze data regarding Canadian dietitians' use of the NCP/NCPT nationally and by province/territory as well as facilitators, barriers, and attitudes regarding the NCP/NCPT.

**Methods:** Dietitians from across Canada were invited to complete an online survey in English or French on the NCP/NCPT from February/2017-April/2017 through multiple channels. Data were analyzed using descriptive statistics and non-parametric tests.

**Results:** There were n=500 eligible respondents; n=426 respondents worked in clinical practice and will be the focus of the remaining results. Overall, 87.9% and 77.5% of respondents reported always/frequently using aspects of the NCP and NCPT in their practice, respectively. There were significant variations in use by province ( $p<0.001$ ); use was more frequent in Alberta and Manitoba vs. other provinces/territories. NCP usage was most commonly facilitated by peer support (73.5% of respondents), use required by workplace (61.2%), and management support (58.8%). Overall, 79.5% of respondents experienced  $\geq 1$  barrier to NCP/NCPT use; the most common barriers were lack of time (53.5% of respondents) and lack of training and education (37.2%). The prevalence of many facilitators and barriers varied by province ( $p<0.05$ ); overall, Alberta and Manitoba respondents reported more facilitators and fewer barriers vs. respondents from other provinces/territories. Attitudes towards the NCP/NCPT were variable.

**Conclusions:** Overall, most dietitians in clinical practice areas reported NCP/NCPT use. There were variations in use, barriers, and facilitators by province. This study provides baseline information that identifies potential avenues to enhance uptake of the NCP/NCPT.

**Significance to the Field of Dietetics:** This information provides insight to develop strategies to promote and increase NCP/NCPT use in Canada.

**Funded by:** Canadian Foundation for Dietetic Research as a special projects grant from Dietitians of Canada; University of Saskatchewan start-up funds

## **Employment and education experience of recent (2014-2019) Ontario and Saskatchewan dietetic graduates**

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**Introduction:** Information on career paths and program satisfaction of dietetic graduates is needed to identify trends and emerging practice areas, support recruitment, and inform program quality and continuing education.

**Objectives:** To provide an overview of employment paths of graduates who completed training in Ontario and Saskatchewan to meet the educational and professional qualifications to write the Canadian Dietetic Registration Examination (CDRE) from 2014-2019.

**Methods:** A web-based survey was developed, with advisory committee input, pre-tested using cognitive interviews (n=5), and pilot tested with recent graduates (n=17). Respondents were recruited via universities, training programs, and Dietitians of Canada social media, website, and newsletter from June-September 2019.

**Results:** Of the 314 respondents, >75% of respondents were employed as dietitians at the time of surveillance and most (78%) had obtained employment as a dietitian within twelve months following training. The top three roles for first dietitian positions were health care teams (22%), in acute care hospital/in-patient (14%), and community health (14%). In addition, 33% had a secondary dietitian position with a different employer. The average length of first dietitian positions was 15 months, however, 38% of respondents changed primary positions within the first twelve months. In total, 83% were satisfied/very satisfied with the training provided. Areas with lower satisfaction included cultural competence and financial management. Furthermore, 91% felt they had the knowledge and skills and 80% felt they had the ability and opportunity to advance their dietetic career.

**Conclusions:** Survey results indicate a positive outlook for new graduates. While graduates expressed overall satisfaction with their dietetic training, cultural competence and business skills relevant to private practice were indicated as areas where more in-depth training would be of value.

**Significance to the Field of Dietetics:** The findings have importance for recent graduates, students considering entering the profession, educators and employers. Data from this survey may serve as a baseline for future surveys or comparison with other provinces.

Funded by: Dietitians of Canada

# **Cultivating leadership: Preliminary results on the ways leadership skills are currently taught in dietetic education in Canada**

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**Introduction:** Within Canada, leadership is emerging as a competency domain for dietitians. Moreover, leadership within the health sector is recognized as key to improving healthcare systems. Without an understanding of the different leadership domains resident in health professions, it is challenging to develop curricula and assess leadership skills in dietetic trainees.

**Objectives:** To understand the ways current dietetic education in Canada provides leadership training and development to students and interns.

**Methods:** A document analysis of program documents from 13 dietetic programs using a standardized extraction tool was conducted. To elaborate on program activities, one purposively sampled, 90-minute focus group discussion with four dietetic educators was completed. Participants were asked questions about the ways leadership is taught in their programs. An audio recording of the interview was transcribed verbatim, and the transcript thematically coded and analyzed using NVivo 12. Themes from the document analysis and focus group were reviewed in relation to the LEADS in a Caring Environment Framework.

**Results:** Program documents suggest leadership is developed through a range of in-class activities focused on self-reflection, effective communication, engaging others, and developing plans. Educators elaborated on activity types and assessment strategies, and added that an essential component of curriculum design is the ability of the dietetic educators themselves. Educators are key in shaping the content and quality of taught content. Themes that align with LEADS were also identified.

**Conclusions:** A clear understanding of the different leadership domains in the health professions is necessary to develop and assess leadership skills in dietetic trainees.

**Significance:** This research may inform future opportunities for leadership curricula development for dietetic education and practice

## **Employment of Ontario and Saskatchewan graduates (2014-9) with First Nations, Inuit and Métis (FNIM) governance or health facilities.**

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**Introduction:** Current integrated competencies for dietetic education and practice (2013) encompass foundational knowledge of cultural competence, however, graduates may not be specifically prepared for work with Indigenous peoples.

**Objectives:** Using a broader survey of dietetic graduates from Ontario (ON) and Saskatchewan (SK) (2014-9), we aimed to describe initial employment, specific to FNIM governance or health facilities, and relevant perceptions of preparation.

**Methods:** A pre-tested survey was mounted on SurveyMonkey® from June-September 2019 and completed by 314 graduates from ON (n=261) and SK (n=53).

**Results:** The employer for their first primary position as a dietitian, was identified as FNIM governance or health facility by n=22 (10% of question respondents; 64% from SK; 1 who identified as Indigenous). This was the top employer category for first primary dietetic positions in SK. Position locations were in ON (6), SK (11), Alberta (2), Quebec (1) and other (1); 2 in remote/northern locations. Fourteen jobs were full-time (6 being full-time permanent), exceeding relative employment security across all first positions. Principal roles were in community health (n=14), family health teams (n=7) or home care (n=1). By the time of surveillance, 3 graduates remained working for FNIM sector employers and 4 held current positions with provincial governments. While most respondents had high satisfaction with their education and training and felt prepared for their employment, some gaps arose. Feedback included, "Content on First Nations would have been helpful" and "I would like every student to have an entire placement where they focus on Indigenous Health."

**Conclusions:** The FNIM governance and health facilities sector employs many recent graduates, especially in SK. Additionally, these jobs are relatively secure. Nevertheless, some recent graduates, most Caucasian, expressed desire for more Indigenous cultural education.

**Significance:** Dietetic education/training needs to explicitly address Indigenous cultural competence to better prepare graduate for contemporary work opportunities.

**Funded by:** Dietitians of Canada 2019 to University of Waterloo to support PhD Candidate, S. Caswell (PI)

# Education, Training and Counselling

## Remote delivery of peanut allergy prevention in-service via Skype

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**Purpose:** In 2017, National Institute of Allergy and Infectious Diseases (NIAID) released addendum guidelines recommending early peanut-food introduction at about 6-months, instead of the previously recommended 3-years of age. Vancouver Coastal Health (VCH) public health (PH) dietitians conducted a knowledge translation (KT) training on this update to 0-5-year public health nurses (PHN) to equip them to deliver this message to clients in the community.

**Process:** In 2017, provincial allergists contacted VCH PH dietitians to collaborate on the dissemination of the new guidelines to parent-infant groups. A 17-month pilot project was conducted at one of six community health areas (CHA). In Sept 2019, an in-service was then delivered to the remaining five CHAs. The entire process followed the principles of Pyramid of Professional Influence.

**Systematic Approach Used:** Two Skype sessions on separate days were offered to participating PHNs with varied work schedules. Using Skype reduced the time and cost required for in-person attendance. 52 out of 69 eligible PHNs attended, a 75% participation rate. To evaluate the impact, participants were invited to complete pre-, post-session and 3-month follow-up surveys. Five questions were asked, including PHN's general allergy knowledge, specific peanut-allergy knowledge, skills to assess allergy risk, ability to access allergy prevention resources, and confidence in communicating the new guidelines. Post-session surveys showed 25-55% improvement in all areas, with confidence in communicating showing the greatest improvement. Initial analysis of the 3-month surveys shows similar results.

**Conclusion:** Dissemination of the peanut allergy prevention message was achieved by following the Pyramid of Professional Influence, optimizing different skillsets of public health dietitians and nurses, and employing Skype. Similar training will continue regionally and provincially.

**Recommendations:** Dietitian collaboration with hospital specialists is recommended for KT in PH. Utilizing online platforms like Skype can greatly increase the efficiency of this work.

**Significance:** Dietitians across all areas of practice play a significant role in KT.

# Research Methodologies

## Being challenged and transformed by Community-Based Participatory Research

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**Purpose:** To share my experience as a dietitian and PhD graduate who was transformed by Community-Based Participatory Research (CBPR) with women facing difficult life circumstances (e.g., low income, recent immigration to Canada, social and geographical isolation).

**Summary of content:** I started my PhD research under the ENRICH Research Program and its overall goal of promoting healthy weights through healthy eating in pregnancy and postpartum. However, by building meaningful relationships with women, as well as healthcare and service providers in community settings, I realized that weight was not going to be the focus of my research because women facing difficult life circumstances clearly prioritized other aspects of their lives and health. As such, I explored women's perceptions and experiences of health during pregnancy and postpartum.

**Systematic approach used:** By following the principles of CBPR, I became aware of women's knowledge and perceptions about health, including nutrition, and how they did not always translate into healthy behaviours due to women's complex life circumstances. Indeed, women's realities shaped their experiences during pregnancy and postpartum. Early in my research, I felt unsure about advocating for maternal nutrition when housing, income, and adequate access to prenatal care were much bigger issues for my participants. However, I also learned how powerful community food programs could be in facilitating social and health supports.

**Conclusions:** CBPR can deeply transform researchers who embrace multiple ways of knowing and reflexivity. CBPR enabled me to view and frame food as a gateway for social change and women's advocacy.

**Recommendations:** CBPR aligns with many tenants of critical dietetics, and is a viable and desirable approach for enhancing advocacy among dietitians and communities.

**Significance:** By developing trusting and respectful relationships in CBPR, where various ways of knowing are valued, dietetic researchers and professionals can identify community strengths and knowledge to be built upon and highlighted.

**Funded by:** The ENRICH Research Program was funded by Alberta Innovates. Maira Quintanilha was funded by the Vanier Graduate Scholarships

## **Dietetic and nutrition researchers in Canada: who are they and what are they researching?**

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**Introduction:** Recently, there has been increased attention to equity, diversity, and inclusion within research in Canada. This focus speaks to issues of both representation and excellence in research by valuing diverse perspectives. Discipline specific explorations are needed.

**Objectives:** To describe nutrition and dietetic faculty members according to institution type, rank, gender, Registered Dietitian (RD) status, research metrics, primary research methods used, and research topic.

**Methods:** Researchers were identified from nutrition departments at U15 universities and at accredited dietetic programs. Gender was identified through the mention of gender-specific pronouns (eg. She, him). All data regarding faculty members, their institutions, H-index, number of documents published, number of citations, number of co-authors, and most recent publications were collected through publicly available university websites and Scopus. A researcher's 5 most recent publications were selected, and coded according to methods used and broad nutrition-related topic area. Data were entered into Microsoft Excel and SPSS was used for data analysis.

**Results:** Faculty members (n=245) from 21 institutions were identified for inclusion, including 75 faculty members who identified as an RD. RD faculty members are less likely to be affiliated with U15 universities ( $p < 0.001$ ), more likely to be affiliated with a PDEP accredited institution ( $p = .026$ ), and more likely identify as a woman ( $p < 0.001$ ). RDs were significantly less likely to hold a senior rank (i.e. full or emeritus professor) ( $p=0.046$ ) compared to non-RD faculty members; however, this relationship was almost entirely attributed to gender ( $p=0.006$ ). Among RD faculty members, more than half of the papers published were quantitative.

**Conclusions:** RD faculty members are not equitably represented among senior faculty ranks in nutrition-focused departments in Canada and this is attributed to their gender. Quantitative research methods dominate the field, particularly at U15 institutions.

**Significance:** Discipline-specific issues of equity, diversity, and inclusion are present within nutrition and dietetics.

**Funded by:** University of Manitoba and Faculty of Agriculture and Food Science StartUp Funds: Food Systems and Health

# Determinants of Food Choice, Dietary Intake

## Environmental determinants of eating behaviour: Impact of the community food environment

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**Purpose:** To establish an interactive mapping tool that provides a point in time assessment of community level food access and availability across the Region of Peel.

**Process:** Local restaurant and food retail outlet data was obtained through the public health inspection database and re-categorized by outlet type to evaluate geographic access and availability at varying levels of geography.

**Systematic Approach Used:** All food retail outlets were systematically categorized using clear outlet definitions and a categorization algorithm. Access was measured using proximity to outlet types using a pedestrian street network. Availability was measured using density (absolute number) of retail outlet types and relative density (proportion of outlet types to others). Community measures used population weighted centroids, while school measures captured outlets within 800 metres of any school access point.

**Conclusions:** The Region of Peel has a large number and proportion of food retail outlets primarily associated with the sale of highly processed, less healthy options (e.g., fast food restaurants and convenience stores) that are easily accessible (i.e., within walking distance of residential areas and schools). This type of food environment undermines healthy eating according to Canada's Dietary Guidelines by encouraging the frequent consumption of foods and beverages that are highly processed and likely to contribute excess sodium, free sugars and / or saturated fat to the diet.

**Recommendations:** Data from this tool supplements local population health surveillance data and research evidence to build institutional, public and political support for creating healthy community food environments.

**Significance to the Field of Dietetics:** This tool will help dietitians better understand the local context in which residents are making food choices. With this awareness, dietitians are well positioned to advocate for healthy public policies including land use and transportation policies that influence the location, type and accessibility of food outlets in the community.

## **Food service satisfaction in long term care: Making the Most of Mealtimes Study**

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**Introduction:** Residents' food service satisfaction (FSS) in long term care (LTC) homes can contribute to malnutrition risk. Low food satisfaction has been found to lead to weight loss, undernutrition and a spiral of negative health effects. The Making the Most of Mealtimes Study (M3) examined the determinants of food and fluid intake of 639 residents in 32 diverse LTC homes in Canada.

**Objectives:** 1) To identify resident level characteristics of those who completed the FSS questionnaire. 2) To examine food and nutrition related factors associated with FSS in LTC homes. 3) To validate the construct validity of the FSS questionnaire used in the M3 study.

**Methods:** Secondary data from the M3 study obtained from 329 residents examined the FSS score (21 questions with a score range of 21-63), Cognitive Performance Score, Patient Generated – Subjective Global Assessment, energy intake, protein intake, diet prescription, texture modification, and prescribed oral nutritional supplement. Descriptive statistics, bivariate analysis, and one-way ANOVA were used for statistical analysis ( $p$ -value  $\leq 0.05$ ).

**Results:** The respondents were  $86.3 \pm 7.6$  (SD) years of age, 64.4% female, 51.1% with mild/moderate cognitive impairment and 38.3% were malnourished. Associations were found between lower FSS scores and a modified diet texture prescription [ $t(327)=3.401$ ,  $p=0.001$ ], thickened fluid prescription [ $t(327)=2.458$ ,  $p=0.014$ ] and malnutrition diagnosis [ $t(327)=2.354$ ,  $p=0.020$ ]. The FSS score was associated with modified diet textures ( $F=11.6$ ,  $p=0.001$ ).

**Conclusions:** The FSS questionnaire is a feasible tool that can be used in LTC to assess FSS in residents with mild cognitive impairment. FSS is associated in expected directions with nutrition variables.

**Significance:** The FSS questionnaire demonstrated construct validity in this sample of LTC residents with mild/moderate cognitive impairment. FSS can be used with confidence by dietitians to support menu planning and improvements in mealtimes.

Funded by: Canadian Institutes of Health Research

## **Exploring professional perceptions of healthy eating**

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**Background:** Healthy eating, food, and health habits contain a richness of meaning within the dietetic profession similar to the population as a whole. Food is viewed broadly as both a commodity and source of nourishment, juxtaposed with reduction of foods to constituents and nutrients based on functionality.

**Objectives:** The objective of this research was to deepen our understanding of the roles food plays in the personal and professional lives of dietetics students and registered dietitians across Canada.

**Methods:** The meaning of food was examined through an exploratory qualitative study using the photovoice technique, which helped to identify individual perceptions and personal epistemologies and ontologies related to food roles in participants' lives. An unstructured interview guide facilitated 30-45 minute individual in-depth interviews with participants. The design consisted of three data collection phases with two student groups (winters of 2015 and 2016) and one dietitian group (winter 2017). Data were coded, placed into categories and then broad themes were established. Critical Discourse Analysis (CDA) formed the basis of interpretation of the underlying meanings of participant perceptions.

**Results:** Participants included 10 students and 15 registered dietitians from across Canada. Dietitians and students identified factors affecting their perceptions of what constituted healthy eating, including barriers and enablers to food procurement, food preparation skills, and marketing myths, further exploring the impact these have on food as an asset for practice.

**Conclusions:** This study provides a unique perspective in understanding the constructions of healthy food and healthy eating in the dietetic profession in Canada.

**Significance:** Findings indicate a need to challenge common reductionist approaches to healthy food and to embrace the joys of eating, as noted in current national food guidance documents.

# **Consumption of sugars and comparisons of nutrient intakes and major sugars-containing foods among Canadian adults using the Canadian Community Health Survey 2015 Data**

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**Introduction:** Global dietary guidelines recommend reducing free sugars intake, which may affect Canadians' choices of sugars-containing foods, including those that are nutrient-dense and good sources of fibre, calcium and/or vitamin D.

**Objectives:** The aim was to assess the intakes of macronutrients, micronutrients and sugars-containing food categories across the spectrum of sugars consumption in Canadian adults.

**Methods:** The first day 24-hour recall from the nationally representative 2015 Canadian Community Health Survey (CCHS)-Nutrition Public Use Microdata File for adults  $\geq 19$  years ( $n=11,817$ ) was analyzed. The intakes of added sugars and free sugars were estimated using the previously published 10-step algorithm by Louie et al. 2015. Intakes of macronutrients, micronutrients and food categories were compared across quintiles of total sugars intake [by %E (energy)] using ANOVA with post-hoc Bonferroni adjustment for multiple comparisons, adjusted for misreporting status and covariates. Sample weights and bootstrapping were applied to ensure national representation.

**Results:** Canadian adults consumed on average 86.9g/d (18.8%E) from total sugars, 47.5g/d (9.9%E) from free sugars. The mean intakes for the 1<sup>st</sup>(Q1), 3<sup>rd</sup>(Q3), and 5<sup>th</sup>(Q5) quintiles of total sugars were 7.9 %E, 19.0 %E and 33.0 %E, respectively. In the fully adjusted model, Q3 had higher fibre, calcium, vitamin D, vitamin A, vitamin C and potassium intakes than Q1 ( $p < 0.001$ ), reflecting higher fruit, milk and yogurt ( $p < 0.001$ ) consumption. Compared to Q5, Q3 had higher intakes of folate, vitamin B<sub>12</sub>, iron, phosphorus, and zinc.

**Conclusions:** Canadians with moderate intakes of total sugars tended to have higher fibre and overall better micronutrient intake compared to those with very low or very high intakes of total sugars.

**Significance:** These data are important to be considered by dietitians and policy makers when providing dietary guidance to the public.

Funded by: The Mitacs and the Canadian Sugar Institute

## **Perception des jeunes à l'égard de la division des responsabilités liées à l'alimentation au sein de leurs futurs ménages**

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Introduction: L'acte de cuisiner est fortement encouragé en promotion de saines habitudes de vie. Au Canada, la charge mentale associée aux tâches liées à l'alimentation est principalement féminine.

Objectif: Documenter la perception d'adolescents à l'égard du partage des tâches liées aux repas dans leur futur ménage.

Méthode: Des participants aux ateliers de cuisine et d'éducation alimentaire des Brigades Culinaires de 54 écoles du Québec ont complété un questionnaire auto-administré. Ils furent invités à se projeter dans dix ans, soit vers 24-25 ans, pour décrire la distribution envisagée des tâches liées aux repas (planification, épicerie, cuisine de semaine, cuisine de fin de semaine) entre eux et leur partenaire. Quatre choix de partage de responsabilités furent proposés incluant leur responsabilité, celle du partenaire, une responsabilité partagée et ne vraiment pas le savoir. L'âge et le genre (homme, femme, autre) furent documentés. Des tableaux de fréquence, des tableaux croisés et des corrélations ont été générés avec SPSS (version 25).

Résultats: Plus de 60% de tous les répondants (n=796, 13.9 ans  $\pm$  1.5 ans, 72% femmes) prévoient partager les tâches de planification et d'achats. Environ 50% prévoient partager les responsabilités liées à la cuisine et près de 9% ne savent vraiment pas qui cuisinera. Les femmes envisagent davantage le partage de tâches que les hommes ( $p \leq 0.05$ ). Le partage de la planification est corrélé avec le partage de toutes les autres tâches ( $p < 0.01$ ). Les sujets de sexe « autre » (n=33) prévoient exercer plus de responsabilités de planification et de cuisine ( $p \leq 0.05$ ).

Conclusion: Ces résultats suggèrent une évolution de la division des rôles vers des responsabilités plus partagées. Davantage de recherches permettraient de comprendre les perceptions selon l'identification au genre.

Importance Pour La Nutrition: Documenter les perceptions de la division des rôles dans les ménages et son évolution dictera l'adaptation de la promotion de l'acte de cuisiner.

Financé par : La Tablée des chefs

# Nutritional Assessment and Therapy

## Implementation of a malnutrition treatment pathway

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**Purpose:** Our centre implemented a malnutrition treatment pathway to identify, diagnose and monitor malnutrition.

**Systematic approach:** Dietetic technicians and dietitians were trained on the Canadian Nutrition Screening Tool (developed and validated by the Canadian Malnutrition Task Force) and the subjective global assessment (SGA). Patients at risk who are screened by the dietetic technician are flagged to the dietitian to assess for malnutrition and its severity using the SGA. The SGA includes a physical assessment that is a new practice for the dietitians. In-services were provided to the multidisciplinary team on the consequences of malnutrition and the team's role. A monitoring pathway to evaluate consumption was developed and implemented, adapted from the Integrated Nutrition Pathway Acute Care (INPAC) pathway.

**Summary of content:** Through quality nutrition audits, the number of at-risk patients assessed by the dietitian improved from 59 to 83%. The documentation of malnutrition improved from 55 to 80%. The majority of our malnourished patients were in the mild to moderate category (58% of those assessed). There was a 50% greater length of stay in the malnourished patients compared to those not malnourished. There was also an improvement in patients consuming more than 50% of their food tray, improving from 18 to 36%.

**Conclusion:** The process involved a change in practice for the screening and treatment of malnutrition and provided a structured approach to care.

**Recommendations:** The malnutrition pathway has now been expanded to the rehabilitation centers within our organization. Future plans are to expand further in the community to ensure that malnutrition treatment continues along the continuum of care.

**Significance to the Field of Dietetics:** This work serves and has served as a framework for other organizations that want to address and increase awareness about malnutrition. The process improves patient flow, helps to provide timely access to care, and is cost-effective.

**Funded by:** The training of the SGA was funded partly by Abbott Nutrition

# **Exploring the delays and characteristics of patients with recommended enteral nutrition support on the medicine units of St Paul's Hospital (SPH)**

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**Introduction:** Delays in the implementation of enteral nutrition (EN) or tube feeding (TF) can prolong malnutrition in hospitalized patients. Limited EN research in polymorbid medical inpatients has resulted in a lack of strong guidelines for this population.

**Objectives:** To identify the time frame between the recommendation and implementation of EN in practice, explore the reasons for interruptions, and compare the characteristics of patients with timely EN implementation versus delayed.

**Methods:** An exploratory quantitative study with a retrospective chart review was conducted on 48 medical inpatient charts at SPH. TF implementation was considered delayed if achieved in >3 days for acute stroke diagnoses and >7 days for all other admitting diagnoses. For group comparisons, the two-sample t-test and the Fisher's Exact test were performed for continuous and categorical variables, respectively. P-values < 0.05 were considered statistically significant.

**Results:** 33% of patients were in the Delay group. The median time to TF implementation in the Delay group was nine days (IQR=8,11) compared to two days (IQR=1,4) in the No-Delay group. In the overall sample, 44% experienced acute cognitive change, 46% had communication difficulties, and 46% had no personal advocates. Fewer patients in the Delay group (44%) achieved successful TF implementation compared to the No-Delay group (81%) (p=0.0185). Less continuity of care, represented by more dietitian changes, was found in the Delay group (75%) versus the No-Delay group (41%) (p=0.029). The top interruptions were tube-related issues (primarily tube placement and dislodgement issues) and extended decision-making durations.

**Conclusion:** One-third of the recommended TF implementations were delayed. Suggestions for improving this process include enhanced tube-related education, inclusion of EN wishes in advance care planning, and consistent dietitian coverage. Further research evaluating tube-related issues, especially in patients with acute cognitive change, is recommended.

**Significance:** Timely EN in hospitalized patients is important to mitigate malnutrition and its associated risks.

**Funded by:** Providence Health Care Practice-based Research Challenge

## **A pilot study: 12-week exercise intervention for cancer survivors; the impact on diet quality and anthropometric measures**

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**Introduction:** Obesity is a major contributing factor to chronic disease development and cancer reoccurrence. However, there is limited data on the impact of programs on dietary practices and anthropometric measures of cancer survivors.

**Objectives:** To assess the effect of a 12-week group exercise program on diet quality and anthropometric measures.

**Methods:** Adult cancer survivors (n = 35) were recruited to participate in a 12-week exercise program. Assessments at baseline and at 12-weeks measured anthropometric measures, handgrip strength (an index of muscle function and protein status), physical fitness, and lifestyle factors.

**Results:** Retention rate was 71% (n=25), all participants were female. Mean BMI was  $31.4 \text{ kg/m}^2 \pm 7.1$ . Mean waist circumference was  $104.0 \pm 13.5$  cm. Participants rated their frequency of consuming a balanced diet as “fairly often” (4 on a 5-point scale from almost never to almost always) and on average often eating an excess of two of 4 choices to limit assessed (sugar, or, salt, or animal fats, or junk food). At 12 weeks there was a small but statistically significant reduction in mean weight ( $1.2 \pm 1.9$  kg), and waist circumference ( $5.1 \pm 5.1$  cm). Handgrip strength increased from a mean health benefit rating of good to very good. Participants additionally reported that they reduced their consumption of excessed foods by one choice.

**Conclusion:** A 12-week exercise intervention has a small but statistically significant impact on some dietary measures. Cancer survivors perceive their diets to be balanced, however they report consuming some foods in excess and the majority were not in a healthy weight range. Studies exploring the long-term impact of exercise on nutritional outcomes and further exploration into the dietary intake of cancer survivors are required.

**Significance:** Exploring outcomes beyond diet such as grip strength and anthropometric measures can be used by Registered Dietitians to improve health of cancer survivors.

# Dietary Assessment

## Assessing dietary intake of pregnant women

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**Introduction:** Healthy pregnancy interventions that focus on optimal nutrient intake have shown improvements in outcomes for both mothers and infants. Accurate assessment of dietary intake is key for evaluating changes in nutrition behaviours, and adherence to dietary goals of an intervention. Two methods frequently used in interventional studies to assess nutrition are the Short-Form Food Frequency Questionnaire (SFFFQ) and the 3-day Food Intake Record (3dFR), which may be more difficult to obtain.

**Objectives:** The purpose was to determine the difference between dietary quality scores (DQS) calculated from a self-reported SFFFQ and a SFFFQ completed from a self-reported 3dFR from pregnant women at 12-18 weeks gestation. It was hypothesized that there would be no difference in the DQS from these two tools (null hypothesis).

**Methods:** Pregnant women completed a self-reported SFFFQ and 3dFR. An investigator, blinded to the self-reported SFFFQ, used the pregnant women's 3dFR to complete a SFFFQ by averaging the number of servings of each food category consumed over the three recording days. Following the methodology of Cleghorn et al. (2016), the DQS was calculated for both SFFFQs, and compared using fixed-effects analysis of variance and Cohen's d effect sizes.

**Results:** Thirty-five self-reported SFFFQ and 3dFRs were analysed. No significant differences were found between DQS means for the self-reported SFFFQ and SFFFQ completed by the investigator from the 3dFR ( $10 \pm 1.83$  vs  $10 \pm 1.85$ , respectively;  $p = 0.30$ ,  $\alpha = 0.8$ ). Cohen's  $d = 0.2$ , suggesting a small effect.

**Conclusions:** Results suggest that there is no difference in the DQS of the two measures used to assess dietary intake at 12-18 weeks gestation.

**Significance:** Examination of dietary habits should be performed using a tool that allows for greatest participant adherence. Tools with higher adherence, such as the SFFFQ, may be chosen to improve research and clinical nutrition assessments into specific nutrition patterns and behaviour for pregnant women.

Funded by: Ontario Graduate Scholarship

## **Pilot test to validate a diet assessment tool for pre-diabetes/metabolic syndrome counselling**

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**Introduction:** Lifestyle interventions significantly improve cardiometabolic risk conditions, prediabetes and/or metabolic syndrome in clinical trials, and efforts are underway to spread effective programs in the health care system. Valid and feasible diet assessment tools that can detect diet changes in individuals are needed to evaluate effectiveness. A new food frequency tool (DIETQ) was developed from the 2007 Canada's Food Guide with the PREDIMED Mediterranean Diet Score, based on the results of the first CHANGE program study (<https://www.metabolicsyndromecanada.ca/>).

**Objectives:** This pilot study tested the feasibility of conducting a validation study of the DIETQ in primary care, using the ASA24-C (2016) online diet assessment system.

**Methods:** Dietitians involved in the implementation of the CHANGE program were asked to perform two dietary assessments using the DIETQ, at baseline and three months. Patients completed two rounds of 7 days of 24-hour food recalls/records using the online system. Dietitians' and patients' perceptions of the DIETQ were assessed through individual phone interviews. The number of servings of 25 food groups were assessed by the two dietary assessment methods at baseline and 3 months by Pearson correlation and paired t-test. Interview answers were scored, and content analyzed to assess dietitians' and patients' user experiences of DIETQ.

**Results:** Two RDs and four patients completed the pilot study. Participants' average rating of DIETQ's feasibility and sensitivity was very good to excellent. DIETQ took about 25 minutes to complete. The online system proved challenging to most patients. Higher correlations ( $r > 0.5$ ) between methods at both baseline and three months were observed only for Total Fruit, Total Milk and Alternatives, Nuts Unsalted, Total Nuts, and Solid Fat.

**Conclusion:** This pilot study provided critical insights on developing a proposed national validation study. Validated tools to assess diet change in individuals are needed to demonstrate the counselling effectiveness of dietitians in practice.

Funded by: Faculty general account and in-kind support from Metabolic Syndrome Canada

# Community-based Nutritional Care

## Assessment of malnutrition and nutrition risk in a specialized geriatric population

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**Introduction:** Malnutrition and nutrition risk, common in older adults, leads to declines in health and reduced physical and cognitive functioning. Nutrition screening identifies patients at nutrition risk and who are appropriate for Registered Dietitian (RD) assessment and intervention.

**Objectives:** To identify malnutrition risk in a population of older adults (> 65 years) in a specialized geriatric clinic, to identify characteristics of those classified as malnourished or at risk of malnutrition, and to develop a process for nutrition assessment and intervention.

**Methods:** Cross-sectional study of nutrition risk, using the Mini Nutritional Assessment Short Form (MNA®-SF), was conducted over a twelve-month period in a specialized geriatric clinic. Specific referral criteria: dementia management, chronic disease management, functional status decline, frailty, and frequency of falls. The MNA®-SF screen was completed by nurse assessors during the initial clinic visit. Demographic information, height and weight were measured, and BMI determined. For patients identified at nutrition risk, further steps included RD review, nutrition assessment and intervention.

**Results:** Nutrition screens were completed on 235 patients, (mean age of 80 (SD=8), 60% female). Forty-two percent (n=98) were identified as at risk: 8% (n=18) were malnourished and 34% (n=80) at risk of malnutrition. In the Nutrition risk group, 51% (n=41/80) reported weight loss. Mean Body Mass Index (BMI) was 26.4 kg/m<sup>2</sup> (IQR: 23.3-29.7). No patients with a BMI > = 30 were malnourished; 21% of the at-risk patients were obese (n=17/80).

**Conclusions:** Nutrition screening identified a cohort (n=59/235; 25%) as malnourished/at risk that would benefit from RD nutrition assessment and intervention. This study highlights nutrition risk in a specialized geriatric population and will inform next steps in developing nutrition screening and intervention processes.

**Significance to field:** Nutrition screening of geriatric patients referred for specialized geriatric assessment is recommended. This project provides rationale for advocacy for the role of the RD within a specialized geriatric clinic.

# **Nutrition care practices of dietitians and oral health professionals to optimize dental health in ‘real-world’ settings: A scoping review**

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**Introduction:** The burden of dental diseases (e.g., tooth decay) is substantial worldwide. Dietary intakes are often implicated as a cause of dental diseases. Both dietitians and oral health professionals (OHP) (e.g., dentists, dental hygienists, dental therapists) may provide nutrition care to optimize dental health.

**Objectives:** To identify and map studies that have captured information on nutrition care practices of dietitians and OHP to improve dental health.

**Methods:** A literature search was conducted in May/2019 using the following databases: Medline, CINAHL, and EMBASE. Studies met the following criteria: English-language, published from 2000-2019, and conducted in a World-Bank high income country.

**Results:** In total, 76 articles were included for analysis. Most articles described cross-sectional survey studies (73.7%) and did not have a specific focus on nutrition, but rather other topics (e.g., preventative dentistry). In total, 97.4%, and 5.3% of studies reported on nutrition care practices of OHP and dietitians/nutritionists, respectively. In total, 28.9% and 85.5% of articles provided information on nutrition assessment and nutrition intervention practices, respectively. Most studies provided only general/unspecific information on assessment and intervention practices (e.g., dietary analysis, nutrition counseling, diet advice) and lacked specific information (e.g., types of dietary assessment tools used, type of information provided to patients, time spent on nutrition care). Barriers to providing nutrition care by OHP were noted in 14 articles and were common (e.g., lack of knowledge, time). Few studies reported on interprofessional collaboration between dietitians and OHP.

**Conclusion:** Numerous studies have captured information on nutrition care practices related to dental health, however, there is limited information available on the type of care provided. Few studies have examined the practices of dietitians and interprofessional collaboration between dietitians and OHP.

**Significance to the Field of Dietetics:** Dietitians have an important role in working collaboratively with OHP to help decrease the burden of dental diseases.

## Clinical Research (Including Outcomes of Intervention)

### Effects of registered dietitian counselling on dietary composition and malnutrition indices in cirrhosis patients

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**Introduction:** In patients with cirrhosis, access to nutrition therapy for patients by a registered dietitian (RD) can be limited and little efficacy data exists.

**Objectives:** This observational study aimed to: 1) describe dietary intake, using an adapted Mediterranean diet Score (aMDS, 13-point scale) along with calorie and protein intakes; 2) describe disease severity and malnutrition status using Meld-Na, Child Pugh (CP), handgrip strength (HGS), and subjective global assessment (SGA), and; 3) describe efficacy of nutrition therapy.

**Methods:** Malnourished outpatients (SGA B/C) with decompensated cirrhosis were recruited in Calgary, Alberta. Patients received an 8-week, RD-led intervention promoting increased protein and calories and Mediterranean diet (MD) behaviours. Three-day food records and malnutrition indices were collected at baseline and 8-weeks. Data is reported as proportions, and means and standard deviations or medians and interquartile range (IQR). Data was analyzed using paired sample t-tests.

**Results:** Nine patients were recruited and at 8-weeks seven completed all assessments. Participants were diagnosed with alcohol-related cirrhosis except one who was diagnosed with primary biliary cirrhosis, were 55% female, 62.3±10.9 years, dry body mass index (BMI)=21.3 ± 3.1 kg/m<sup>2</sup>, Meld-Na=11.0 ±3.9, CP=6.8±1.8, HGS=25.2±3.1kg, had a SGA=B, median caloric intake=2095 (IQR=1626-2515) kcal, median protein intake= 84 (IQR=67-107)grams, and a median aMDS score=5.0(IQR=2.5-5). At 8-weeks only HGS increased significantly to 27.4±6.8kg (p = 0.02). Although not significant, both calories and protein increased to 2595 (IQR=1906-2847)kcal and 88 (IQR=86-117)grams. Four patients also improved their aMDS score. The following MD behaviours improved: increased consumption of nuts (n=6), fish (n=3), legumes (n=1), and decreased sweets and baked goods (n=5).

**Conclusions:** A RD-led intervention appeared to improve caloric and protein intake and MDS. HGS also showed slightly improved muscle strength.

**Significance to Dietetic Practice:** RDs may find it valuable to track caloric intake, protein grams, MD scores and HGS over time to monitor the success of nutrition therapy in cirrhosis patients.

Funded by: Cumming School of Medicine Seed Grant, University of Calgary

# Food Security

## Food literacy and food insecurity among university students: A pilot study

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**Introduction:** Although food insecurity has been identified as a concern among Canadian university students, little is known about the relationship between food security and food literacy or the barriers to food literacy.

**Objectives:** 1) to develop and test a tool to measure food literacy and barriers to food literacy 2) to assess food insecurity, food literacy and barriers/enablers to food literacy and 3) to assess the association between food literacy, barriers to food literacy and food security in a sample of university students.

**Methods:** A food literacy questionnaire was developed to assess food selection, preparation, confidence in preparing food as well as barriers/enablers to food literacy. Adult food security was assessed using a validated instrument. The survey was completed online by university students who were contacted through class invitation. Ethical approval was obtained.

**Results:** A total of 60 students completed the survey. The three food literacy subscales were found to be internally consistent (Cronbach's  $\alpha=0.77-0.88$ ). Over half (56%) of students were food insecure. A higher proportion of food insecure students perceived transportation to the grocery store ( $p=0.02$ ), insufficient food skills ( $p=0.05$ ) and a lack of confidence in preparing food ( $p=0.05$ ) as barriers to food preparation compared to food secure students. No other significant associations were found between food literacy and food insecurity.

**Conclusions:** Food insecurity is a significant concern in this sample of university students. Food insecure students reported experiencing more barriers to food literacy than other students.

**Significance:** The high rates of food insecurity in this sample is a concern because of the known impact of food insecurity on nutrition and health. It is important for dietitians to advocate for policy and program changes to both reduce food insecurity and barriers to food literacy among university students.

## Wellness and Public Health

### **Exploring factors related to infant feeding in women intending to exclusively breastfeed in Newfoundland and Labrador, Canada**

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**Introduction:** Breastfeeding provides immense benefits for both mother and child, including a decrease incidence of disease. Historically, Newfoundland and Labrador (NL) has held the lowest rates. In NL, 75.7% of women report an intention to breastfeed their child, and 72.4% initiate breastfeeding while in hospital. These rates significantly decline following discharge from the hospital, with one study showing 5.8% exclusively breastfeeding (EBF) at 6 months postpartum.

**Objectives:** To estimate the number of women who intended to EBF their child, estimate the number of infants born to mothers that were EBF after birth and at the time of the first postpartum survey, and identify factors related to those EBF vs. non EBF for infants.

**Methods:** a secondary data analysis of a prospective study conducted from October 2011-2015 called the “Feeding Infants in Newfoundland and Labrador” (FiNaL) study. Variables of interest include in hospital practices, social support, maternal exposure, along with maternal demographics and biological factors. Our analysis included descriptive statistics, univariate and multivariate analysis to determine possible associations between EBF and other variables.

**Results:** Our multivariate analysis revealed breastfeeding for a minimum of one month was most strongly associated with personal support system, one hour or more skin-to-skin contact, and not receiving jaundice treatment. We also found that over half of the women reported having free formula sent to their homes.

**Conclusions:** Breastfeeding initiation rates have been steadily increasing in NL, however duration for EBF is still suboptimal. Many factors appear to influence mothers’ practice of EBF.

**Significance:** Women tend to be aware of the health benefits of breastfeeding, but still many are unable to reach the World Health Organization’s (WHO) of a minimum of 6 months exclusive breastfeeding. By determining the factors related to EBF, especially in women who do intend to EBF, is essential in providing adequate support to families.

Funded by: Janeway Foundation Research Grant

## **Using the ABLe Change Framework to describe the process of scale-up within and across the four First Nations communities participating in Learning Circles: Local Healthy Food to School (LC:LHF2S)**

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**Introduction:** Learning Circles: Local Health Food to School (LC:LHF2S) is a participatory initiative to build capacity within First Nation school communities to improve access to healthy, local and traditional foods. Based on an exemplar project in Haida Gwaii (HG) BC, LC:LHF2S Facilitators in HG, Hazelton/Upper Skeena BC, Ministikwan, SK and Black River, MB worked with local stakeholders to plan, implement and document food-related activities.

**Objectives:** Using the ABLe Change framework (Foster-Fishman & Watson, 2011), we examine the process by which LC:LHF2S was scaled up within and across the four communities.

**Methods:** Data were triangulated from interviews with annual gathering delegates (2016-9) and key stakeholders (2019-20); project reports, minutes, food procurement and student data; coded (some in duplicate) and preliminary themes identified.

**Results:** Change varied within each community context according to ABLe Change ‘Above-the-Line’ factors: unique strengths and supports; relationships developed among Facilitators, local champions and stakeholders within school and food systems; engagement of leadership; values placed on local and traditional foods and interactions among system components. LC:LHF2S implementation was influenced by ‘Below-the-Line’ factors: community readiness; local capacity to respond to LC priorities, including knowledge, skills and motivation for action; and local ‘wins’ (successes achieved and obstacles addressed). ‘Wins’, whether: more local, traditional foods in school meals; a healthy community fund-raising feast; a school learning garden; or activities on the land with local knowledge keepers, facilitated further activity. Annual gatherings fostered exchange of ideas and strategies across communities.

**Conclusions:** Scale-up of LC:LHF2S was enabled by the inherent flexibility of the LC approach whereby the nature and pace of food system change was shaped by participants and community context.

**Significance:** For public health dietitians working with Indigenous communities, LC may help support community-led action towards greater food and nutrition security.

**Funded by:** Component 2 grant from CIHR’s Pathways to Health for Indigenous Peoples (2016-19)

## Other

### **Developing and utilizing an algorithm for incorporating new evidence into practice**

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**Introduction:** Change in practice can result from a recommendation(s) in a practice guideline, a systematic review or meta-analysis of research. New evidence can change practice recommendations and/or the strength of evidence that can impact dietetic practice. The volume of nutrition research published each year makes it challenging to identify the best approach to systematically identify and incorporate new research into practice.

**Objectives:** Practice questions are the backbone of Practice-based Evidence in Nutrition - PEN® System, and the answers to these questions provide recommendations based on the best available evidence. To keep PEN content current, an algorithm was developed to explore options for updating content when new evidence becomes available, in a specified timeframe, and/or based on users' needs and topic priority.

**Methods:** A literature search identified how organizations update scientific reviews or practice guidelines. International representatives, including PEN evidence analysts and content developers, were utilized to inform the process.

**Results:** Peer-reviewed research described the creation of a checklist via a consensus-based process that is used by the Cochrane Collaboration to update systematic reviews. An algorithm was developed to update PEN content based on currency, relevance, quality and impact on dietetic practice. A process was established to rapidly incorporate systematic reviews (RISR) when new information enhances the credibility, quality and/or currency of PEN content. Examples are provided of how this process was utilized to develop and update PEN evidence in a variety of topic areas, including: nutritional supplements to improve immune function, nutrition interventions for lupus, fibre recommendations for cardiovascular disease, among others.

**Conclusions:** Incorporating new evidence to effectively support practice requires consideration based on criteria that includes utilizing limited resources. The algorithm, processes and checklist developed support evidence-based dietetic practice.

**Significance:** The algorithm could help organizations and programs identify and prioritize content to be included in developing and/or updating nutrition care processes.

## **Interprofessional learning in primary health care: A case study exploring interprofessional learning by health professionals**

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**Introduction:** The aim of the research, based on health professional's experiences, is to better inform the inclusion of interprofessional learning opportunities in the development, or improvement, of collaborative care teams.

**Objectives:** The study explores the learning experiences of five diverse health professionals working within collaborative care, to gain a deeper understanding of how interprofessional learning occurs and what enables learning in practice.

**Methods:** A critical incident framework was utilized in semi-structured interviews to explore health professional's experiences working within collaborative care team.

**Results:** Through thematic analysis interprofessional learning was coined as: collaborative, continuous, and reflective in nature. The enablers identified are supportive time and space, trusting relationships, and shared values among team members.

**Conclusions:** Interprofessional learning is complex. It is embedded not only in contextual factors but also intertwined within layers of professional values, culture, diversity and social interactions. When this learning occurs within a group it becomes shared and collective within practice. The participant's voices led the study to the primary findings that interprofessional learning is collective and continuous within practice, and occurs when reflective opportunities are presented. An enabler to interprofessional learning is when a culture of collaboration and learning is supported through engaged leadership. A culture that allows supportive time and space to collaborate among the team, one that supports trusting relationships and shared values.

**Significance:** The prevalence of dietitians working within interprofessional teams is increasing as the model of healthcare delivery in Canada shifts towards a collaborative approach. The results of this study will provide a greater understanding of the complexity of working within a team and align lifelong learning with effective collaborative practice. At a leadership level, the results of this study will lend more successful planning of interprofessional learning opportunities to better support the delivery model of patients.