

# Canadian Foundation for Dietetic Research Research Showcase Early Bird Abstracts

The 2023 Dietitians of Canada (DC) National Conference held on 25–26 May 2023 was our first in-person conference since June 2019 and celebrated our unity and resiliency as a profession. It was amazing! The Canadian Foundation for Dietetic Research (CFDR) showcased a diverse array of experience sharing and research abstracts through oral and poster presentations, and virtual sessions. There were 23 Early Bird (EB) research abstracts, in which 10 were selected for in-person presentations during the conference, and 19 Late Breaking research abstracts which were posters. Thank you to all who submitted abstracts!

Thanks to the dedication and commitment of the Abstract Review Committee members.

Early Bird Abstract Review Committee: Susan Campisi (University of Toronto); Andrea Glenn (University of Toronto); Mahsa Jessri (University of British Columbia); Louise St-Denis (University of Montreal).

Late Breaking Abstract Review Committee: Lesley Andrade (University of Waterloo); Carla D'Andrea Matteo (Consultant, Winnipeg); Laura Forbes (University of Guelph); Billie Jane Hermosura (University of Ottawa); Christine Nash (University Health Network); Louise St-Denis (University of Montreal).

Thanks to the CFDR Board, DC Conference team, digital partners, all of the moderators, and conference attendees for supporting the research presentations.

Warm regards,

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Chair, 2023 EB/LB Abstract Committees  
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## The quality of food choices made by military recruits during Basic Military Qualification in the Canadian Armed Forces

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**Introduction:** The Canadian Forces Leadership and Recruit School (CFLRS) in Saint-Jean-sur-Richelieu, Québec delivers Basic Military Qualification (BMQ) to members joining the Canadian Armed Forces (CAF). Due to the high training load of BMQ, recruits have specific nutrient needs. Considering that adequate nutritional intake is important to promote optimal physical and mental performance, it is essential to understand the food choices of recruits by assessing how often they make healthier choices.

**Objective:** Evaluate the proportion of recruits who selected the healthier daily meal entrée option at the cafeteria during BMQ.

**Methods:** The recruits' daily food intake data was collected during a BMQ in September 2021 using food photography and a snack questionnaire over 2 days. The healthier entrée choices were analyzed in reference to the National

Standardized Cycle Menu, which was designed and implemented by the National Defense StratJ4 Foodservices to facilitate optimal nutrition in CAF dining facilities, including the CFLRS cafeteria. Healthier entrée options are offered at each meal and must meet specific nutritional criteria in terms of macronutrients and energy. The results are presented as average percentage of recruits who chose the healthier entrée at meals daily.

**Results:** The food choices of 33 recruits during 2 days of BMQ were analyzed. On average, 15.2%, 9.1%, and 45.5% of recruits chose the healthier entrée at breakfast, lunch, and dinner, respectively. Furthermore, the recruits who selected the healthier entrée at lunch consumed 53% of it, as opposed to 81% at dinner.

**Conclusions:** During 2 days of BMQ, less than 50% of healthier meal entrée options were selected by recruits. In fact, the healthier entrées were not popular at breakfast and lunch, increasing in popularity at dinner.

**Significance to Dietetics:** These findings offer an opportunity to develop strategies to help recruits make healthier food choices during BMQ to support optimal mental and physical performance.

**Funded by:** Prof. Isabelle Giroux's Research Fund and National Defense StratJ4 Foodservices

## Systemic Changes to Canadian Public Health Dietitian Practice Since 1993

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**Introduction:** Systemic changes to public health dietitian practice refers to the significant shifts in the structure of the profession (e.g., responsibilities, compensation, and resources). There is a need to document these structural changes due to the tremendous growth public health practice has undergone since the last published historical account in 1993. **Objective:** To document reflections from dietitians of significant structural changes influencing public health practice and to capture these impacts in a timeline.

**Methods:** A draft timeline was initially created through a literature review of the grey literature. Through convenience and snowball sampling, key informants were identified and interviewed virtually and by telephone through 1-hour semi-structured interviews, with the draft timeline as a source for discussion for additional perspectives. Interviews were recorded, transcribed, and thematically content analyzed with a team of four researchers to create an ultimate timeline and summary of key changes.

**Results:** Two major meta-themes were identified from the interviews: (1) imposed changes and (2) evolutionary changes. Five themes were established under imposed changes: (1) reorganizing provincial health entities; (2) implementing regulations; (3) increasing nutrition emphasis on provincial policies/strategies; (4) evolving provincial funding for nutrition programs; and (5) fluctuating compensation for nutrition professionals. Three themes under evolutionary changes were identified as: (1) broadening responsibilities; (2) changes in peer support; and (3) evolving use of technology and resources. Key challenges included a lack of recognition from external bodies, internal disagreements with messaging and with other dietetic specialties, and issues with education standards.

**Conclusions:** Structural changes have occurred including reorganization within health departments, the increased prominence of technology, and defunding of certain nutrition programs. Public health dietitians continue their extensive work surrounding nutrition through policy and guideline development, advocacy, and student education.

**Significance to Dietetics:** The results will help inform dietitians on past systematic changes that occurred in the public health field.

**Funded by:** In-kind support from University of Guelph

## Systemic Changes in Canadian Clinical Dietetics within the Past 30 Years

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**Introduction:** There has been a lack of documentation of the major systemic changes that have occurred within clinical dietetics in the past 30 years. Systemic changes are changes in the structure of professional practice including regulation, compensation, peer support, etc.

**Objective:** To develop a timeline documenting the major structural changes and to document dietitians' perspectives.

**Methods:** The draft timeline was developed by synthesizing the data from a literature review of peer reviewed and grey literature. Of key informants identified through target and convenience sampling, 1-hour semi-structured interviews, based on the draft timeline, were conducted virtually with each informant and recorded. Interviews were then transcribed and coded using qualitative content thematic analysis amongst four other researchers, to capture reflections on the impact to clinical dietetics practice and to produce a final timeline of major structural changes.

**Results:** Qualitative thematic analysis of the interviews revealed six themes including: (1) increased use of technology in practice, e.g., Practice-based Evidence in Nutrition (PEN) and Electronic Medical Records (EMR); (2) increasing regulation of practice, e.g., Personal Health Information Protection Act (PHIPA); (3) expansion of responsibilities, e.g., behavioural and motivational counselling; (4) role recognition, e.g., publishing position papers alongside physicians; (5) growth of peer support, e.g., Dietitians of Canada (DC) network groups; and (6) changing reporting structures, e.g., matrix reporting and program management reporting. Key challenges for the future included recruitment challenges due to the aging of the workforce, and uncertain or lack of funding for the programs and services dietitians provide.

**Conclusions:** Over the last 30 years, many systemic changes have occurred due to the advancements in technology, recognition from other health professions, and growing participation in international collaborations.

**Significance to Dietetics:** Documenting these changes will provide dietitians with an accurate historical account of the major systemic changes that have occurred within clinical dietetics.

**Funded by:** In-kind support from University of Guelph

## Quels sont les effets des simulations interprofessionnelles sur la motivation des futurs professionnels de la santé et service social à faire de l'offre active des services en français?

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**Introduction:** L'auto-efficacité sous-tend la motivation d'une personne en sa capacité à adopter puis maintenir un comportement avec succès. Chez les futurs professionnels, la motivation est une composante fondamentale à l'application de compétences en offre active (OA) des services sociaux et de santé en français, d'où l'importance de la mesurer lors d'apprentissage de l'OA par simulations interprofessionnelles (SIMsIPs). En contexte francophone minoritaire, l'OA consiste à offrir le service en français durant tout le continuum des soins.

**Objectif:** Évaluer l'effet de SIMsIPs sur la motivation auto-rapportée de futurs professionnels à faire l'OA.

**Méthode:** Une trentaine d'étudiants (n = 35) en santé et service social ont complété une version modifiée du Motivation Strategies for Learning Questionnaire pré-post SIMsIPs. Les résultats ont été analysés avec SPSS en utilisant un test des rangs signés de Wilcoxon.

**Résultats:** Post-SIMsIP, la motivation des étudiants était augmentée pour plusieurs items: les étudiants étaient davantage motivés à comprendre l'importance de faire l'OA ( $p = 0.034$ ), mettre des efforts pour développer leurs compétences en OA ( $p = 0.012$ ) et comprendre pourquoi il est important de faire l'OA ( $p = 0.035$ ). Les étudiants étaient également plus confiants en leur capacité à faire l'OA ( $p = 0.042$ ).

**Conclusion:** Il est essentiel que les futurs professionnels de la santé et service social soient outillés pour acquérir les habiletés nécessaires à la compétence de l'OA afin de mieux servir les communautés francophones en situation minoritaire (CFSM). Ces résultats démontrent que les SIMsIPs sont des activités d'apprentissage permettant de renforcer plusieurs composantes liées à la motivation des étudiants à faire l'OA.

**Importance:** Selon les Compétences intégrées pour l'enseignement et la pratique de la diététique, l'approche interprofessionnelle axée sur le client et la communication culturellement adaptée sont des compétences que les diététistes devraient utiliser. L'OA étant un élément central de ces compétences pour œuvrer dans les CFSM, accroître la

motivation des étudiants à faire l'OA est important pour la formation des diététistes.

**Financé par:** Projet financé par le CNFS-Volet Université d'Ottawa, le CNFS National et eCampus Ontario

## Quels sont les effets de l'offre active des services en français sur la sécurité et la qualité des soins en milieux cliniques?

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**Introduction:** Les Canadiens francophones en situation minoritaire (CFSM) n'ont pas toujours accès à des services sociaux et de santé dans leur langue, ceci peut engendrer des enjeux de santé et d'équité. L'offre active (OA) des services sociaux et de santé en français par des professionnels est un enjeu central à l'accès à des services de santé sécuritaires pour les CFSM.

**Objectif:** Identifier les effets de l'OA par des professionnels sur la sécurité et la qualité des services sociaux et de santé.

**Méthode:** Une recherche fut effectuée dans PubMed/Érudit avec les thèmes « offre active », « soins de santé », « sécurité des patients » et « qualité des soins ». Les études qualitatives/quantitatives publiées de 2010–2022 en français et en anglais furent importées dans Covidence pour sélection par titre et abrégé, puis par article complet, suivi d'une synthèse narrative des résultats.

**Résultats:** Cent soixante-huit articles furent répertoriés, dont 9 duplicatas. De ce nombre, 30 furent inclus à la sélection par article. Les résultats suggèrent que l'OA tend à améliorer l'accessibilité des soins (n = 10) des CFSM et à permettre aux professionnels d'avoir une meilleure compréhension clinique (n = 7) des besoins des CFSM. Les CFSM ont aussi une meilleure compréhension de leur santé permettant une plus grande participation aux soins (n = 3). La santé des CFSM tend à être proportionnelle à l'OA (n = 10).

**Conclusion:** L'OA favoriserait la qualité et la sécurité des services sociaux et de santé des CFSM. Il existe peu d'articles incluant une pratique adéquate de l'OA, limitant l'évaluation de ses effets.

**Importance:** Une meilleure compréhension de la réalité des CFSM et de l'importance de l'OA par les employés de la santé et services sociaux leur permettraient d'améliorer l'aisance des CFSM à se prévaloir de services dans leur langue, et ainsi d'offrir des services de qualité et sécuritaires à ces personnes.

**Financé par:** Bourse du programme d'initiation à la recherche du CNFS-Volet Université d'Ottawa.

## Practices surrounding mindful eating: a cross-sectional survey study in the University of Saskatchewan Community

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**Introduction:** Canada's Food Guide (CFG) refers to mindful eating (ME) as "being aware of how, why, what, when, where, and how much you eat" and suggests that it can improve eating behaviours. To date, there are few Canadian data regarding awareness of ME, and how often ME is practiced.

**Objective:** To explore whether the University of Saskatchewan (USask) community is aware of ME and if they report practicing behaviours relevant to ME.

**Methods:** The online cross-sectional survey included closed-ended questions on demographics and ME (i.e., ME awareness; engagement in habits conducive/not conducive to ME). Current USask students/staff were eligible to complete the survey available on SurveyMonkey. Participants were recruited in October–November 2022 through the USask announcement board, email, and social media. Descriptive statistical analyses were completed in Microsoft Excel.

**Results:** In total, 165 respondents were included; most were women (75.8%) and students (72.1%). Overall, 67.3% reported knowing what mindful eating is. Respondents were asked about engagement in specific ME habits on typical weekdays; overall, 61.2% sit down for a meal with family/friends; 36.0% pay attention to the aromas/textures/flavours of foods eaten; 35.8% set aside time to focus on meals; and 29.1% eat slowly/thoughtfully. On typical weekdays, many participants reported behaviours not conducive to ME (i.e., 81.2% reported using technology while eating; 79.4% have meals that took <10 minutes which was more frequent among participants ≥25 years (85.7%) versus ≤19 years (69.4%).

**Conclusions:** USask community members had good awareness of ME and did practice behaviours conducive to ME; however, behaviours not conducive to ME were common. Individuals may experience barriers preventing them from eating mindfully which is worth investigating.

**Significance to Dietetics:** The recent addition of ME to CFG increases the need to assess knowledge, attitudes, and practices surrounding ME. Future studies could also examine barriers to ME.

**Funded by:** USask Office of the Vice-President Research First Year Research Experience (OVPR FYRE)

## Nutrition to prevent and manage dental caries: understanding the perceived knowledge, attitudes, and practices of dietitians in Canada

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**Introduction:** Dental caries is the most prevalent chronic disease worldwide and has an important relationship with nutrition. To date, no Canadian data exist on the practices and perspectives of dietitians regarding nutrition to prevent and manage dental caries.

**Objective:** To describe the knowledge, attitudes, and practices of dietitians regarding nutrition to prevent and manage dental caries in Canada.

**Methods:** An interdisciplinary advisory committee guided the study, and a 68-question survey to address the study objectives was developed using a multi-step process. Dietitians from across Canada were recruited using various channels to complete the online English/French survey (SurveyMonkey) from June to August 2021. Data analysis included descriptive statistics and chi-square analysis using SPSSv28.

**Results:** In total, 235 responses were included. Overall, 61.2% and 77.2% of respondents were ≤40 years and had ≤20 years of experience as a RD, respectively, with 84.0% and 29.5% working in nutrition care and public health/health promotion, respectively. Most respondents (85.5%) had never received training on nutrition and dental caries. Respondents reported limited practice activities in this area; one-on-one nutrition counselling was the most common conducted frequently/occasionally by 35.7%. Respondents working in public health/health promotion performed more practices in this area versus those who did not. Barriers regarding nutrition and dental caries were experienced by 58.7%; lack of knowledge/training was most common. Collaboration between dietitians and Oral Health Professionals (OHP) was limited. Most respondents (70.9%) agree/strongly agree that dietitians should have an expanded role in this area.

**Conclusions:** Dietitian respondents demonstrated substantial enthusiasm regarding this area of practice, but knowledge and practices were limited, and barriers were common.

**Significance to Dietetics:** Nutrition and dental caries is an exciting and emerging area of dietetic practice; more research, training programs, and dialogue with OHP are needed to equip dietitians to help decrease the burden of dental caries in Canada and beyond.

**Funded by:** CFDR and Saskatchewan Centre for Patient Orientated Research (SCPOR)

## Nutrition Services in a School-Based Pediatric Clinic

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**Purpose:** The Heart & Hands Pediatric Clinic, a collaboration between Lester B. Pearson School Board (LBPSB) and McGill University, is a school-based clinic that serves an underserved population. This interprofessional teaching site and clinic is Canada's first medical resident-led, school-based clinic. The McGill Dietetics Program provides nutrition consults, follow-ups, and health-promotion activities to the elementary school and community, while training nutrition students how to care for underserved families.

**Process or Summary of Content:** The Dietetics Program joined the clinic in 2021, to provide individual child and family nutrition counselling to children up to the age of 18 years, lead classroom nutrition presentations, and teach medical residents on nutrition-related topics.

**Systemic Approach Used:** A McGill-associated dietitian provides nutritional counselling and supervises dietetic interns. Referrals are received from the Heart & Hands Clinic and from school teachers/staff. The most common nutritional issues seen at the clinic include body weight, picky eating, food insecurity, disordered eating, and eating issues related to neurocognitive disorders. Consults and routine nutrition follow-up is provided. Over 150 children have participated in family counselling or nutrition-related health promotion activities via classroom workshops. Workshop topics were selected based on the needs of the community, as highlighted by the school principal and educators. Collaborations have begun with the Food Service and Nutrition Division of LBPSB to optimize school board-wide nutrition education initiatives that align with the Quebec Education Plan. Finally, nutrition videos were developed for the medical residents to improve their nutrition-related knowledge.

**Conclusions:** Dietitians and dietetic interns offering care via school-based clinics is a novel educational and care delivery model to improve training and improve access to nutrition services among underserved populations.

**Recommendations:** Encourage collaboration between nutrition professionals and the education sector to bring services closer to underserved populations.

**Significance to Dietetics:** The clinic serves as an innovative teaching model and a leading example of how to increase accessibility to nutrition services and health-promoting activities among underserved populations.

**Funded by:** Funding to hire the dietitian was obtained through grants from Dialogue McGill

## Les recrues militaires rencontrent-elles les recommandations en micronutriments clés pour la santé osseuse afin de réduire le risque de blessures musculosquelettiques?

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**Introduction:** La qualification militaire de base (QMB) est intensive, mais indispensable pour former les militaires des Forces armées canadiennes (FAC). Toutefois, l'alimentation des recrues, souvent limitée, peut être sous-optimale pour combler les besoins en micronutriments, particulièrement le calcium, le fer et la vitamine D, pouvant contribuer à des blessures musculosquelettiques. En effet, ceci serait dû au temps limité alloué aux repas et à une dépense énergétique élevée.

**Objectif:** Évaluer si les recrues militaires des FAC atteignent les recommandations en micronutriments clés pour la santé osseuse durant la QMB pour réduire le risque de blessures musculosquelettiques.

**Méthode:** Quatre jours d'apport alimentaire furent compilés avec des photographies auprès de 27 hommes et 6 femmes recrues durant une QMB à l'automne 2021. Les données furent analysées avec ESHA FoodProcessor. Les résultats des apports journaliers moyens en calcium, fer et vitamine D furent comparés aux apports nutritionnels recommandés et exprimés en pourcentage des recrues les atteignant.

**Résultats:** Ainsi, 52,5%, 57,9% et 10,6% des recrues atteignaient les recommandations en calcium, fer et vitamine D respectivement. De plus, 59,3%, 99,1% et 13,0% des recrues masculines rencontraient les recommandations en calcium, fer et vitamine D respectivement, alors que 45,8%, 16,7% et 8,3% des recrues féminines atteignaient les recommandations en ces nutriments.

**Conclusion:** Les recrues militaires n'atteignaient pas les recommandations journalières en vitamine D. De plus, les femmes ne rencontraient pas les recommandations en calcium et en fer. Ainsi, chez les recrues, le calcium, le fer et la vitamine D sont à surveiller puisque, majoritairement, elles n'atteignaient pas les recommandations.

**Importance:** Ces résultats indiquent que les recrues militaires des FAC ont un apport sous-optimal en micronutriments clés pour la santé osseuse, les rendant plus vulnérables aux blessures musculosquelettiques. Les diététistes, par leur expertise, détiennent un rôle clé dans l'optimisation de l'apport des recrues en ces micronutriments et dans la prévention des blessures.

**Financé par:** Prof. Isabelle Giroux's Research Fund and National Defense StratJ4 Foodservices

## Lack of calorie reduction in breakfast cereal products with sugars-related nutrient content claims in the Canadian marketplace

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**Introduction:** Consumers generally perceive products with claims of lower sugars content as being healthier and lower in Calories. Food manufacturers also use these claims to highlight reformulation efforts in response to consumer demands and government policies (e.g., Canada's upcoming mandatory front-of-package labelling regulations).

**Objective:** This study aimed to conduct a cross-sectional analysis of breakfast cereals in the Canadian marketplace regarding the use of sugars-related nutrient content claims and the effect on product reformulation including changes in sugars and energy content.

**Methods:** Breakfast cereals with sugars-related claims introduced into the Canadian market (2012–2022) were obtained from the MINTel Global New Product Database. Product availability in the current marketplace was verified using manufacturers' or major food retailers' web sites. Corresponding reference products were identified based on claim criteria specified by Canadian Food Inspection Agency. Claim and reference products were compared to determine reformulation approaches and changes in calories and sugars content (per 100 grams).

**Results:** Among eligible breakfast cereal products (n = 23), the majority had "no added sugars" claims (n = 15), with the rest having "lower/reduced sugars" (n = 5) and "sugar-free" (n = 3) claims. Nine of the 15 products with "no added sugar" claims had higher energy content compared to their corresponding reference products, despite having a lower sugars content. Further, there was no corresponding calorie reduction for products with "sugar-free" or "lower/reduced sugars" claims. Sugars-based ingredients were often replaced with wheat starch, grain flour, dried fruits, etc.

**Conclusions:** In conclusion, a majority of the breakfast cereals bearing sugars-related claims had an increase or no change in calorie content, making these claims misleading to consumers who expect such products to be healthier.

**Significance to Dietetics:** Dietitians are best positioned to assist their clients and the public in understanding and evaluating the overall nutrition quality of products with sugar claims.

**Funded by:** Canadian Sugar Institute

## La satisfaction des futurs professionnels de la santé ayant participé à des simulations interprofessionnelles par rapport à leur perception des compétences acquises sur l'offre active du français et la collaboration interprofessionnelle

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**Introduction:** Pendant la formation de futurs professionnels de la santé au Canada, il est important de les préparer à travailler auprès des communautés francophones en situation minoritaire (CFSM) en s'assurant de les former à l'offre active des services en français (OA) et à la collaboration interprofessionnelle (CIP). Ces compétences permettent l'offre de soins de meilleure qualité aux CFSM. La simulation (SIM) interprofessionnelle (IP) est une approche pédagogique permettant aux futurs professionnels de développer leurs compétences et leur confiance à faire l'OA et de la CIP.

**Objectif:** Évaluer la satisfaction des futurs professionnels de la santé et des services sociaux quant à leur perception des compétences acquises sur l'OA et la CIP durant des SIMsIPs.

**Méthode:** Des SIMsIPs furent offertes à des futurs professionnels de la santé et services sociaux entre 2021 et 2023. La satisfaction de ceux-ci sur leur perception des compétences acquises sur l'OA et la CIP fut évaluée avec un questionnaire auto-rapporté post-SIM. Les questions furent évaluées avec une échelle de Likert de 5 points.

**Résultats:** Trois-cent-soixante-douze étudiants ont répondu au questionnaire. Les étudiants indiquèrent avoir acquis de nouvelles connaissances lors des SIMs (87,7%) et rapportèrent être motivés à les appliquer dans leur pratique (89,2%). Les étudiants étaient satisfaits de leur apprentissage en OA (87,6%) et en CIP (88,3%). La majorité des étudiants étaient satisfaits de leur performance lors des SIMsIPs (80,6%).

**Conclusion:** Les futurs professionnels de la santé et des services sociaux ayant participé à des SIMsIPs étaient satisfaits de leur acquisition des compétences en OA et CIP, ainsi que de leur performance. Cette activité formative leur permettra de se préparer à l'offre de services professionnels de qualité aux membres des CFSM.

**Importance:** L'OA et la CIP sont des compétences cruciales pour l'offre de soins de santé optimaux, plus particulièrement aux CFSM que les futurs professionnels peuvent acquérir et pratiquer avec des SIMsIPs.

**Financé par:** Consortium national de formation en santé (CNFS) et eCampus Ontario

## Interdisciplinary Collaboration to Develop Subjective Global Assessment Practice Session for Dietetic Students

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**Purpose:** Learning to assess for malnutrition is essential for dietetics training and practice, considering with the Hospital Standards Organization's (CAN/HSO 5066:2021) Malnutrition Prevention, Detection and Treatment Standard. The Integrated Nutrition Pathway for Acute Care (INPAC) provides structure for nutrition care and Subjective Global Assessment (SGA) implementation. Students benefit from diverse teaching methods to develop communication, critical thinking, and physical exam skills, so a simulated event for pre-internship training was created for SGA practice using standardized patients (SPs) to prepare for real patient contact. Partnership with Nursing Educators provided guidance and resources to successfully create the curriculum.

**Process or Summary of Content:** In 2022, a small survey was completed with internship students indicating a lack of confidence to conduct nutrition-focused physical exams. McGill Dietetics Program requested mentoring from McGill's Ingram School of Nursing (ISO-N) and Collège d'enseignement général et professionnel (CEGEP) John Abbott's Nursing Program (JANP) on how to effectively develop physical exam simulated learning, hire SPs, and set up the event. This collaboration led to an ongoing interdisciplinary partnership.

**Systemic Approach Used:** Pre-internship curriculum was reviewed, and gaps were identified following restructuring during COVID-19 restrictions. Consultations with ISO-N and JANP simulation experts were completed. One scenario was written with key indicators for malnutrition risk assessment and used for all hired SPs. JANP provided patient ward simulation space and consultation. Students received a classroom training on INPAC and practiced the SGA with peers. A week later 60 students working in pairs completed the SGA through a 15-minute simulation with an SP. The simulation was immediately followed by a 5-minute debrief using an SGA checklist for feedback done by an evaluator and 2 peers. All pairs observed a second scenario and provided peer feedback using the SGA checklist. Students appreciated the practice session.

**Conclusions:** Dietetics programs benefit from interdisciplinary in-person collaboration on simulated learning

approaches, especially after the pandemic. Practice simulation sessions on malnutrition assessment enhance physical exam, critical thinking, and communication skill development for students.

**Recommendations:** Encourage collaboration between disciplines to enhance hands-on training to recognize malnutrition and better prepare dietetic students for clinical practice settings.

**Significance to Dietetics:** Partnership between nursing and dietetics serves as an innovative teaching model that enhances student learning and access to simulated learning spaces.

**Funded by:** None

## Integrating leadership into curricula: Five strategies to bring leadership development into dietetic education

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**Introduction:** The role of the educator is important in informing, designing, and delivering the program. In dietetics, leadership has been integrated into new education and practice competency domain: Management and Leadership. The available research on dietitians' leadership suggests that leadership is essential for dietetic practice; however, there are limited strategies on how to integrate leadership into dietetic curricula.

**Objective:** As part of a multi-faceted doctoral study, dietetic educators identified potential strategies to integrate leadership into their programs.

**Methods:** Three focus group interviews with dietetic educators were held. There were three educators in each focus group interview (n = 9) representing eight Canadian dietetic programs. Each interview was 90 minutes and held online. Educators were presented with preliminary findings from the broader study and invited to comment. One question asked during the semi-structured interview was, "In what ways might dietetic educators integrate leadership training or experience in their programs?" The interviews were recorded and transcribed verbatim. A thematic analysis was conducted to create codes and identify themes.

**Results:** Dietetic educators appreciated the opportunity to talk about leadership in their programs. Five strategies to bring leadership development into dietetic education were suggested by the educators: (1) clarify the Management and Leadership domain; (2) create a safe space for "failure"; (3) shift the professional culture in dietetic programs towards greater collaboration; (4) offer curricular activities and experiences focused on leadership through the dietetic programs; and (5) curate relevant tools and resources that dietetic educators can integrate leadership into their courses.

**Conclusions:** Dietetic educators offered strategies to support their practice in developing leadership skills in trainees. Teasing apart leadership from management competencies was considered essential. Educators recognized their role to

support leadership development of dietetic students and interns.

**Significance to Dietetics:** By implementing these strategies, elements of leadership are being cultivated among future dietitians.

**Funded by:** None

## Identifying learning needs of dietetic students and support needs of preceptors prior to participating in a pediatric placement

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**Introduction:** Undergraduate dietetics programs build a solid foundation of knowledge for future nutrition professionals. Nutrition needs throughout the life cycle are addressed; however a review of course outlines from undergraduate dietetic programs in Ontario, Canada, displayed a primary focus on the nutritional considerations of adults with brief or insufficient pediatric course topics. This learning gap may place dietetic students at a disadvantage when pursuing a placement or career in pediatrics.

**Objective:** This study aimed to identify learning needs of dietetic students prior to participating in a pediatric placement.

**Methods:** A systematic search of peer-reviewed and grey literature was conducted according to PRISMA-ScR guidelines in October 2021 and repeated May 2022. Studies met the following criteria: English language, published from 2006 to 2022, materials focused on nutrition and dietetic student learning needs and included perspectives from the student, preceptor, or educator.

**Results:** In total, 25 articles were identified. Two themes emerged identifying specific learning needs of dietetic students and preceptor identified learning or support needs. Dietetic students feel more confident and prepared for practicum after engaging in learning opportunities which include simulated patients, objective structured clinical examinations, and virtual simulations. In contrast, it is evident that dietetic students preferred active experimentation, case-based and communication skill learning. For dietitians, barriers to precepting included lack of time and incentives, stress, and insufficient training.

**Conclusions:** This review outlined many learning strategies acceptable to dietetic students which would enhance the curriculum. Further, it is clear there is a need for enhanced support/resources for preceptors to help improve placement experiences. However, the lack of research on learning needs for pediatric practice must be addressed to ensure effective preparation of competent pediatric-focused dietitians.

**Significance to Dietetics:** The learning strategies identified should be implemented with a pediatric focus in dietetic

curriculums. Further, preceptors appear to require more support from the institutions.

**Funded by:** None

## Functional food literacy competencies of people living with celiac disease regarding the purchase of food: results from a survey completed in Québec, Canada

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**Introduction:** Celiac disease is an autoimmune disease for which the only treatment is a life-long gluten-free diet. This requires substantial changes in dietary habits and assumes food literacy competencies to purchase gluten-free foods.

**Objective:** This study assessed the functional food literacy competencies, specifically "obtaining food" skills of this population.

**Methods:** A French questionnaire inspired by the Celiac Disease Quality of Life Measure was reviewed by Coeliacque Québec scientific committee and approved by the Health and Science Research Ethics Board. In 2021, 12 000 Coeliacque Québec newsletter subscribers were invited to respond via the LimeSurvey platform. Five survey items related to the functional nutrition literacy competence "Obtaining food," according to the Slater 2022 food literacy framework.

**Results:** A total of 1608 people participated and 733 questionnaires were analyzed. Eighty-seven percent of respondents identified as women, and the mean age was  $48 \pm 15$  years. Twenty percent find food labels difficult to understand. Also, 82% are bothered by the time it takes to locate gluten-free products in stores. When a certification logo is displayed on a new product, 35% will buy it without further checking the label, compared to only 12% when products only display a gluten-free claim. Twenty-nine percent will not buy a new product that does not have a gluten-free logo nor claim.

**Conclusions:** Although the introduction of the Canadian labelling regulations for food allergens in 2012 have made labels easier to read, respondents seem hesitant to trust logos and claims and will read the food label despite the time it requires. Many respondents avoid consuming products that have no logo or claim, even though some of them are gluten-free.

**Significance to Dietetics:** The study demonstrates the importance of supporting the development of functional nutrition literacy competencies, specifically "Obtaining food" skills, so people living with coeliac disease avoid unnecessary restrictions. Further labeling improvements may also increase the confidence of consumers.

**Funded by:** None



## Exploration of dietary and supplemental vitamin D intakes among nutrition students with the 2015 Canadian Community Health Survey (CCHS)

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**Introduction:** Adequate vitamin D (VD) is critical for individuals during their child-bearing years as suboptimal maternal VD can lead to negative maternal and infant outcomes. CCHS data indicated that most individuals capable of bearing children between 18 and 45 years do not meet their dietary VD requirements. Nutrition professors play a vital role in educating nutrition students on the merits of their own VD intake, supplementation, and VD food sources, as they fall within this age category.

**Objective:** To describe the dietary and supplemental VD intake differences between nutrition students and the CCHS.

**Methods:** Fifty-five students were recruited from an Ontario University. Participants completed 3-day food records analyzed by ESHA. Dietary and supplemental VD intake data were collected from CCHS [n = 2737] components: “24-hour Dietary Recall” and “Nutritional Supplements and Details,” and were analyzed using SAS. Descriptive statistics determined average VD intake and top contributors of VD food sources.

**Results:** Students’ with mean age of 22.7 years had dietary VD intake of  $3.3 \pm 3.3$  mcg and supplemental VD intake of 22.4 mcg. CCHS data reported mean dietary VD intake of  $4.25 \pm 0.18$  mcg and supplemental VD intake of  $28.3 \pm 2.17$  mcg. Top VD food contributors from students were eggs (24%), cow’s milk (22%), and cheese (20%), compared to cow’s milk (31%), margarine (17%), and eggs (10%) in CCHS data.

**Conclusions:** Results indicate that CCHS individuals and nutrition students in their child-bearing years are not meeting their VD requirements from food. However, VD supplementation was an important component for both groups to better meet their requirements. Top VD food contributors were similar between groups.

**Significance to Dietetics:** These findings provide convincing evidence that young individuals are not meeting their VD requirements unless they are consuming VD supplements. Nutrition education strategies will need to be implemented to discuss possible supplementation with these individuals.

**Funded by:** Brescia University College

## Examining Affect Emotions of Canadians When Thinking About Dietitians

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**Introduction:** Despite increasing interest in patient-centred care (PCC) in dietetics, there are few studies that have examined how to individualize PCC to improve patient outcomes.

**Objective:** To understand the mind and emotional signatures of Canadians when thinking about, or interacting with, a dietitian.

**Methods:** Canadian adults aged 18–44 years (n = 201, 108 females, 93 males) evaluated a set of 24 systematically varied messages (16 messages in total) on a 5-point scale (1 = does not fit at all, 5 = fits me very well), following a permuted, repeated measures design regarding their affect emotions when thinking about, or interacting with, a dietitian. For each respondent, an individual-level equation was created relating the presence/absence of the messages to the stated likelihood of how well the messages describe them. Using K-means clustering, respondents were divided into different groups or mindsets (MS) based on their patterns of coefficients emerging from the regression modelling.

**Results:** MS-1 respondents (n = 103) were generally interested in dietitians but did not have any specific affect emotions when thinking about dietitians. MS-2 (n = 36) responded to messages about the interplay between being free versus constrained and connected versus disconnected. MS-3 (n = 32) responded to messages about adventure, taking action, and the interaction between the affect feelings about the past/future, and feelings about their inner and outer self. MS-4 (n = 30) responded to messages about adequacy/inadequacy, and the interplay between the spiritual and physical.

**Conclusions:** In conclusion, the emerging mindsets transcend “who” the person is and are created directly according to the specific topic of “how the person thinks” about dietitians.

**Significance to Dietetics:** By developing a series of mindset typing tools on a broad-spectrum of topic areas valued by dietitians, this work has the potential to support dietetic practice by individualizing PCC.

**Funded by:** Funded by Toronto Metropolitan University and Canadian Foundation for Innovation

## Evaluation of Calcium Content in Tofu Products and Comparison with Canadian Nutrient File

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**Introduction:** In May 2022, Health Canada released “Applying Canada’s Dietary Guidelines,” additional information to help health professionals/policymakers apply the 2019 dietary guidelines. Among suggested foods to support specific nutrient needs, tofu is listed as a food with a high calcium content to help achieve increased requirements in several age groups.

**Objectives:** To evaluate and compare calcium contents of in-store tofu products with Canadian Nutrient File (CNF)

reference values. To validate whether various tofu in the current marketplace can be considered to have a high calcium content.

**Methods:** In May 2022, data on tofu were collected using front-and-back label photographs in local and Asian grocery stores/supermarkets in: Quebec, Alberta, the Maritimes, Manitoba. Products were categorized according to firmness/coagulant and compared to corresponding CNF products. Information on nutritional labels determined if the item qualified for a “high in” calcium claim ( $\geq 15\%$  Daily Value/ $\geq 195$  mg per 85g reference amount [RA]) per Health Canada regulations. Products indicating calcium  $\geq 300$  mg per RA underwent nutritional analysis by a certified laboratory.

**Results:** Out of 92 tofu products, 65% had no CNF equivalent. Of those with a CNF equivalent, 80% ( $n = 24$ ) contained less calcium than the corresponding CNF product. Almost all products used a calcium coagulant yet 80% did not reach the conditions for a “high in” calcium claim. Nine products underwent nutrient analysis: 33% displayed accurate ( $\pm 20\%$ ) calcium values on their label and only 66% actually qualified for the “high in” calcium claim.

**Conclusions:** Most tofu products found in-store use calcium coagulants yet are ineligible for a “high in” calcium claim. Calcium content of tofu may be below label value.

**Significance to Dietetics:** Although Canada’s dietary guidelines recommend tofu (prepared with calcium) as a food high in calcium, caution is advised as the calcium content of in-store products varies substantially and most do not qualify as being “high in” calcium.

**Funded by:** Dairy Farmers of Canada

## Does insulin delivery technology change our relationship with foods? A scoping review

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**Introduction:** Automated insulin delivery (AID) systems reduce the management burden and improve glycemic control for people with type 1 diabetes (PwT1D) by automatically providing insulin as a response to continuously measured glucose levels. There is a lack of evidence on AID and nutrition outcomes.

**Objective:** To analyze the literature regarding AID use and nutrition outcomes in PwT1D and synthesize current evidence regarding AID’s relationship with nutrition.

**Methods:** Two researchers conducted a blinded search of Medline (OVID) and PubMed for studies including AID use (compared to multiple daily injections or pumps) and nutrition-related variables. Studies from 2000 to 2022 were included, as were PwT1D of all ages.

**Results:** A total of 2,188 articles were screened for appropriateness. After exclusions,  $n = 7$  studies were included (2017–2022): 4 qualitative, 1 two-arm crossover, 1 observational, retrospective, and 1 theoretical review. In quantitative studies, AID was associated with lower eating distress ( $p = 0.004$ ), but not carbohydrate (grams) intake in meals ( $p = 0.24$ ) and snacks ( $p = 0.99$ ). In qualitative studies, AID seemed to increase the frequency and portions of food intake and led to less dietary control from parents. PwT1D using AID reported eating foods higher in fat, carbohydrate, and energy density. PwT1D were less worried about achieving accurate carbohydrate counting. It was reported that PwT1D believed AID use would lead to decreased skills in carbohydrate counting.

**Conclusions:** AID appeared to influence eating behaviours, dietary patterns, and carbohydrate counting, although evidence to support this relationship was limited. AID may reduce food management burden due to the perception that AID can correct for carbohydrate counting inaccuracy.

**Significance to Dietetics:** There is a need to determine if AID allows for simplification of carbohydrate counting and improves eating behaviours while maintaining glycemic stability. Further research will allow health care professionals such as Registered Dietitians to reform nutritional recommendations for those who use AID.

**Funded by:** None

## Description of responsive feeding practices in early learning and child care environments through a modified assessment framework

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**Introduction:** Responsive feeding environments allow children to recognize their internal signals of hunger and satiety through prompt and developmentally appropriate responses by their caregiver(s), fostering children’s self-efficacy, self-regulation, and healthy relationships with food. The CELEBRATE Feeding project is implementing a coaching intervention to support responsive feeding in early learning and child care (ELCC) environments across the Maritime provinces.

**Objective:** To comprehensively describe responsive feeding practices in ELCC environments using established and enhanced scoring frameworks.

**Methods:** The Environment and Policy Assessment and Observation (EPAO) tool was modified to reflect responsive feeding language resulting in a modified EPAO and a CELEBRATE scale. Day-long observations were conducted in 18 ELCC classrooms. Observation items were combined into 21 responsive feeding scores on both scales, with a score of 3 indicating the most responsiveness. Descriptive analyses were conducted.

**Results:** The most responsive scores among classrooms on both scales were educators not using food to calm or encourage behaviour ( $M = 2.94$ ,  $SD = 0.24$ ;  $M = 2.98$ ,  $SD = 0.06$ ) and not requiring children to sit at the table until finished ( $M = 2.89$ ,  $SD = 0.47$ ;  $M = 2.97$ ,  $SD = 0.12$ ). Least responsive scores within the EPAO included educators prompting children to drink water ( $M = 0.78$ ,  $SD = 0.94$ ) and children serving themselves ( $M = 0.83$ ,  $SD = 0.38$ ). The least responsive in the CELEBRATE scale were educators enthusiastically role modelling during mealtime ( $M = 0.70$ ,  $SD = 0.68$ ) and educators praising mealtime behaviour that was unrelated to food intake ( $M = 0.74$ ,  $SD = 0.55$ ). The overall averages by classroom for both scales were  $M = 41.00$ ,  $SD = 7.07$  and  $M = 37.92$ ,  $SD = 6.50$ , respectively.

**Conclusions:** The CELEBRATE scale captured detailed observation information about responsive feeding practices that may allow for documenting change over time.

**Significance to Dietetics:** Establishing responsive feeding practices is challenging given the range of beliefs around feeding children and the competing demands on educators' time. The modified EPAO tool and the CELEBRATE scale provide detailed measurement of responsive feeding practices to inform and support coaching by dietitians in these environments.

**Funded by:** Canadian Institutes of Health Research (CIHR)

## Creating an Interactive Timeline on the History of Food Service Dietetics in Canada

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**Introduction:** Dietitians working in food services are responsible for managing quality nutrition services, projects, and programs at various institutions. There have been drastic changes in the profession of dietetics, including food services, since the last historical report was produced in 1993.

**Objective:** This study aims to report dietitians' experiences of systemic changes and develop a timeline of events that have contributed to the evolution of food service dietetics on a national scale.

**Methods:** A literature review was conducted, with data from peer-reviewed articles and grey literature used to develop a draft timeline. Key informant dietitians were interviewed online, using a semi-structured format. Interview transcripts were coded and content analyzed thematically to populate the final timeline and report on key changes in food service dietetics.

**Results:** Key informant interviews identified six main themes: (1) changes in outsourcing food services, e.g., to contract companies and centralized facilities; (2) evolution of resources and technology, e.g., computerized ordering software and food production equipment; (3) expanding scope of

responsibilities, e.g., food service directors managing support services and involvement in hospital administration committees; (4) advocating for dietitians' roles in food services, e.g., fair compensation and roles in leadership and management; (5) changes in peer support, e.g., networking online and interactions with other departments; (6) advocating for increased budgets e.g., meeting rising food costs and providing quality meals to hospital inpatients. The main challenges for the future include adequate budgeting support in food service departments within institutions, access and use of resources and technology, and decline of food service peer networks.

**Conclusions:** Since 1993, food service dietetics have been impacted by systemic changes in expanding the responsibilities of practitioners, advancing technology, and outsourcing food services in varying degrees across Canada.

**Significance to Dietetics:** The ensuing article and timeline will provide a historical update and provide guidance in future opportunities in food service dietetics.

**Funded by:** University of Guelph (in-kind)

## Beliefs and behaviours associated with vegetarian, vegan, and gluten-free diets among Canadians capable of bearing children

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**Introduction:** There has been an increase in the popularity of plant-based (e.g., vegan and vegetarian) and gluten-free (GF) diets globally. However, there is a paucity of research investigating the beliefs and behaviours of Canadian adults capable of bearing children.

**Objective:** To explore the beliefs and behaviours of Canadians capable of bearing children who follow a vegan, vegetarian, (or) gluten-free diet.

**Methods:** Participants were recruited through social media to complete a 102-item questionnaire designed to assess the beliefs, behaviours, and knowledge associated with a vegan, vegetarian, (or) GF diet. Analysis included response frequencies for quantitative variables and use of open-coding to organize qualitative responses into themes.

**Results:** Two hundred and seventy-one participants completed the survey, with 27%, 21.8%, and 3.7% indicating they followed a vegan, vegetarian, and GF diet, respectively. Almost ¼ of participants indicated a hesitation to tell others about their current dietary habits. Of these individuals, a fear of judgement and stigma around their diet was the most common theme reported (34.3%). Less than half of the sample (43.9%) reported that they did not consume dairy products. Values/ethics surrounding animals and the environment were the top (32.8%) reasons for abstaining from dairy, with health being the second most common reason (14.3%). Conversely, 31.1% of dairy consumers indicated doing so for health/nutritional benefits. Health also appeared to be the primary

driver (36%) for individuals' desire to follow their diet long term.

**Conclusions:** These findings confirm the experience of judgement and stigma among Canadian adults capable of childbearing who follow vegetarian, vegan, (or) gluten-free diets. Further, it highlights the role of health beliefs in the dietary behaviours of these individuals.

**Significance to Dietetics:** Understanding the beliefs and behaviours of individuals following a vegetarian, vegan, (or) GF diet will allow dietitians to better tailor their counselling to meet the needs of the client.

**Funded by:** None

## Adolescent food security status and associations with nutrition and health determinants: a cross-sectional study linking a Manitoba survey and administrative health data

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**Introduction:** Food insecurity is impacted by social determinants of health and is a risk factor for poor nutrition. Limited data exists in Manitoba examining determinants affecting food security among adolescents.

**Objectives:** (1) Describe patterns of food insecurity among Manitoba youth and (2) identify associations between food security status, diet quality, nutrition/health-related behaviours, and health determinants among this group.

**Methods:** This cross-sectional study analyzed data collected from grade nine students (n = 1587) from 37 Manitoba

schools in 2018–2019. Students completed a web-based survey on food security (Child Food Security Survey Module), diet (24-hour diet recall), eating behaviours, and health indicators. As part of the consent process, parents/guardians could provide their child's personal health identification number (PHIN). Survey data for the PHIN subset of participants (n = 947) were linked with health-related variables through the data repository at the Manitoba Centre for Health Policy. Chi-square tests explored associations between demographics, eating behaviours, select health determinants, diet quality (Healthy Eating Index-Canada), and food security status. A multivariable logistic regression model determined associations with food security.

**Results:** Overall, 20% of participants were food-insecure. Eighty-one percent of food-secure and 67% food-insecure participants' diets were classified as "need improvement." Food security was positively associated with living in a rural community, living in neighbourhoods with higher median incomes, and eating family dinner more frequently. Living in a northern community and moving residences often were negatively associated with being food-secure.

**Conclusions:** Findings shed light on the intersection of food and nutrition (in)security. While results illustrate a socioeconomic and geographic vulnerability to food insecurity, the diet quality of most adolescents is far from exemplary.

**Significance to Dietetics:** Both food and nutrition insecurity are significant contemporary threats to public health. These results enhance dietitians' understanding of the multidimensional nature of this issue and inform advocacy efforts to shape meaningful program and policy directives.

**Funded by:** Canadian Institutes of Health Research